

Chapter 4

Cumulative Impacts

This section addresses potential cumulative impacts to the environment that could be associated with implementation of the proposed alternatives in conjunction with one or more other past, present, and reasonably foreseeable future actions. Specifically, this section is prepared in accordance with the requirements of NEPA. The Council on Environmental Quality (CEQ) regulations implementing NEPA do not provide detailed guidelines with respect to the content or format of a cumulative impacts analysis in an Environmental Impact Statement (EIS). The CEQ regulations, however, define a “cumulative impact” for purposes of NEPA as follows:

Cumulative impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.25).

In evaluating past, present, and reasonably foreseeable future actions that, in conjunction with the alternatives, could result in potential cumulative impacts, this SEIS addresses potentially cumulative impacts associated with other related wastewater treatment/conveyance projects in the South Bay area, and potentially cumulative impacts associated with other unrelated approved or reasonably foreseeable projects within or near the SBIWTP site.

4.1 Past, Present, or Reasonably Foreseeable Future Actions

4.1.1 San Diego Clean Water Program—South Bay Treatment Plant

Under the City of San Diego’s Clean Water Program, development of the South Bay Treatment Plant is intended to comply with mandates of the 1987 amended federal Clean Water Act, which required the City of San Diego to upgrade its sewage treatment system to include secondary treatment prior to ocean discharge (City of San Diego, 1996 and 1997). Development of the South Bay Treatment Plant will entail phased construction of three components: (1) the South Bay Water Reclamation Plant, (2) the South Bay Secondary Treatment Plant, and (3) the Southern Sludge Processing Facility. Ancillary to the South Bay Treatment Plant are the South Bay Conveyance System and the South Bay Reclaimed Water Distribution System. These facilities comprise pipeline distribution systems for transporting wastewater to and reclaimed water from the South Bay Water Reclamation Plant, respectively. These facilities are shown in Figure 4-1.

Figure

4-1 San Diego Clean Water Program Projects Location Map

4.1.1.1 South Bay Water Reclamation Plant

The South Bay Water Reclamation Plant will be the first component of the South Bay Treatment Plant to be developed. The primary objective of the plant is to provide wastewater treatment capacity within the City's South Bay area to reduce anticipated loads on the South Metro Interceptor System that conveys South Bay wastewater to the Point Loma Wastewater Treatment Plant. A secondary objective is to produce reclaimed water for distribution to the South Bay area. The proposed reclamation plant is a 7-mgd (307 L/s) water reclamation facility to be developed on a 22.3-acre (9-ha) site at the southeast corner of Dairy Mart Road and Monument Road. The SBWRP is planned to start operations during the end of 2001.

A related component of the reclamation plant project would be the improvement of Dairy Mart Road between I-5 and Monument Road. This component of the reclamation project encompasses approximately 56 acres (22.7 ha) and includes: (1) realignment and improvement of approximately 1 mile (1.6 km) of Dairy Mart Road, (2) replacement of an existing 55-foot-long (16.8-m) bridge across the Tijuana River and a new 1,000-foot-long (304.8-m) bridge, (3) realignment and improvement of the south levee of the Tijuana River channel between the SBIWTP access road and the replacement bridge, and (4) removal of the existing road and bridge.

The reclamation plant site is designated for a conventional sewage treatment plant in the Tijuana River Valley Plan and in plans for the County of San Diego's Tijuana River Valley Regional Park (City of San Diego, 1996).

4.1.1.2 South Bay Secondary Treatment Plant

The South Bay Secondary Treatment Plant is proposed as a future phase of the South Bay Treatment Plant to increase secondary treatment capacity to 49 mgd (2,146 L/s). The proposed facility would be developed adjacent to and southwest of the SBWRP within an approximate 5- to 10-year time frame (see Figure 4-1).

4.1.1.3 Southern Sludge Processing Facility

The Southern Sludge Processing Facility is proposed as a future phase of the South Bay Treatment Plant to provide capacity to process approximately 123.5 tons (112 metric tons) per day of sludge generated at the SBWRP and the South Bay Secondary Treatment Plant. The proposed facility would be developed adjacent to and southwest of the SBWRP and immediately west of the South Bay Secondary Treatment Plant (see Figure 4-1).

4.1.1.4 South Bay Conveyance System

The proposed South Bay Conveyance System is a network of pipelines and pump stations intended to convey wastewater collected in the South Bay area to the South Bay Reclaimed Water Distribution System and South Bay Secondary Treatment Plant. In addition, the South Bay Conveyance System will provide for an interim sludge pipeline from the South Bay Water Reclamation Plant to the South Metro Interceptor System. Initial construction of the South Bay Conveyance System includes an 18-mgd (788 L/s) sewage pump station to be located near the intersection of Grove Avenue and Hollister Street (approximately 2 miles

north-northwest of the reclamation plant site) and an approximate 3.8-mile-long (6.1-km), 30-inch-diameter (76.2-cm) sewer force main to convey influent to the reclamation plant (see Figure 4-1). The South Bay Conveyance System pipeline corridor also would be used for the planned future development of a 72-inch-diameter (177.8-cm) sewer line to be developed in conjunction with the South Bay Secondary Treatment Plant.

4.1.1.5 South Bay Reclaimed Water Distribution System

The proposed South Bay Reclaimed Water Distribution System consists of approximately 24 miles (38.6 km) of transmission pipelines and distribution pipelines, two pump stations, one 3-million-gallon (13.638-million-liter) storage tank, and one 1.7-million-gallon (7.728-million-liter) storage tank (Figure 4-1). The SBRWDS will be divided into several subsystems, including: (1) the Tijuana Valley Subsystem, (2) the San Ysidro Subsystem, and (3) the Otay Mesa Subsystem. Of these, the Tijuana Valley Subsystem will be near the reclamation plant. The Tijuana Valley Subsystem will convey reclaimed water to users north and east of the reclamation plant through a 30-inch-diameter (76.2-cm) pipeline. The pipeline will extend north from the reclamation plant along the proposed realignment and improvement of Dairy Mart Road and the new bridge. From there, the pipeline will travel northwest to I-905 to the San Ysidro Subsystem (City of San Diego, 1997).

4.1.2 Other Actions

4.1.2.1 Immigration and Naturalization Service Multi-Tiered Pilot Fence Project

The U.S. Immigration and Naturalization Service (INS) has implemented a “multi-tiered” system of fences to prevent the entry of illegal immigrants and drugs into the United States along the United States—Mexico border (Figure 4-2). Construction of these fences adjacent to the existing border fence at a site in San Ysidro and in the vicinity of the Otay Mesa Port of Entry recently has been completed. One component of the fence project has been built on the south flood control levee east of the SBIWTP (Army Corps of Engineers, 1997). Because this project is complete in the project area and its impacts are part of the “baseline” existing environment discussed in Chapter 2 of this SEIS, it is not anticipated to contribute to any cumulative impacts and is not discussed further.

4.1.2.2 Coral Gate Project

The proposed Coral Gate project involves construction of a planned residential development consisting of 444 detached single-family units in the southwestern portion of San Ysidro, along with associated school, park, and open space facilities (City of San Diego, 1991). The planned development is to be located on approximately 112 acres (45.36 ha) located directly north and east of the Tijuana River Flood Control levee and approximately 1,800 feet (54,864 cm) to the northeast of the SBIWTP site (see Figure 4-3).

The development includes paving of a road adjacent to the northern flood control levee to connect the site with Dairy Mart Road at the USIBWC field office site. Initial site development work has commenced (Zirkle, 1997).

Figure

4-2 INS Multiple-Tiered Border Fencing Project

Figure

4-3 Coral Gate Project Location Map

4.1.2.3 City of San Diego Flood Control Project

The City of San Diego conducts ongoing, periodic maintenance activities in the vicinity of Hollister Street and west to Saturn Boulevard. These activities consist of such short-term, intermittent actions as dredging and removal or replacement of berms. Long-term plans for flood control involve purchasing land and relocating residents so that new levees can be constructed. The time frame for these activities is undetermined.

4.1.2.4 Ongoing USIBWC Floodplain Maintenance

In December 1996, the USIBWC initiated vegetation mowing activities as part of maintenance activities related to the Tijuana Flood Control Project. The mowing of approximately 37.5 acres of riparian habitat, composed predominantly of young black willow and mulefat, was completed in the summer of 1997. In order to continue these clearing activities on an ongoing basis, in October 1997, the USIBWC and the INS amended a memorandum of understanding, dated January 1980, concerning the maintenance of the Tijuana River Flood Control Project. This amendment describes an arrangement between the two agencies for the clearing of vegetation in an area encompassing approximately 157 acres. The clearing of riparian and exotic vegetation is to be accomplished by use of a rotary weed and brush mower up to four times per year.

4.1.2.5 Parallel Conveyance System Project—Tijuana, Baja California, Mexico

The planned Parallel Conveyance System Project is primarily to provide a redundant conveyance system, to allow repairs on the existing conveyance system, and to avoid spills into the United States resulting from failures in Tijuana's existing conveyance system and pumping plant. A possible interim use for the Parallel Conveyance System will be to temporarily transport and dispose of SBIWTP effluent if the SBOO is delayed. An Environmental Assessment was recently completed for the project (EPA, 1997) and construction of the project is currently planned for completion in May 1999.

4.2 Project Alternatives Cumulative Impacts and Mitigation

This section summarizes the cumulative impacts that could be associated with the proposed alternatives when considered in conjunction with the environmental effects associated with the reasonably foreseeable future actions discussed above. Cumulative impacts were not identified in association with the INS fence project or the flood control and maintenance projects.

4.2.1 Water Quality

Groundwater, surface water, and marine water resources would be subject to cumulative impact from the proposed alternatives if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, pollutants in runoff from construction (short-term impacts) or pollutants resulting from operations (long-term impacts) of an alternative would adversely affect local and/or regional surface or marine water quality or would violate permit standards or water quality regulations.

4.2.1.1 Impacts

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

Construction

With the exception of the AIPS at Spooner's Mesa and Advanced Primary Only alternatives, the alternatives would entail development and construction of a limited number of structures and ancillary facilities within the confines of the SBIWTP site as evaluated in the 1994 Final EIS. The primary potential construction-related surface and groundwater cumulative impact would be associated with stormwater runoff. No potential for construction-related cumulative impacts to marine water quality is anticipated for any alternative.

For certain alternatives, dewatering prior to construction may be required. Any collected water would be desilted prior to discharge as required to comply with water quality standards. The rate of discharge would be controlled to reduce impacts to any biological resources. Periodic testing of any dewatering effluent would be performed prior to or during construction in compliance with waste discharge requirements that would be set by the RWQCB. The alternatives and the other projects described here (e.g., the South Bay Water Reclamation Plant and related projects and the Coral Gate project) would all have the potential to cause sedimentation and water quality impacts during construction. During the construction of these projects, however, the quality of any stormwater runoff would be managed in accordance with the state construction NPDES permit requirements for stormwater pollution prevention; therefore, there is limited potential for these projects cumulatively to cause significant adverse impacts to surface water quality.

Operations

As noted in Section 3.1, operation of the alternatives is not anticipated to adversely impact surface or groundwater quality. Operation of an alternative would be in compliance with the California General Permit for Stormwater Discharges Associated with Industrial Activities. This includes implementing BMPs to minimize pollutants in stormwater runoff during long-term operation of the treatment plant facilities.

A potentially significant cumulative impact to marine water quality could occur for the SBIWTP with the Less than Full Secondary Effluent Alternative, if advanced primary treated effluent were discharged concurrently with secondary effluent from the City of San Diego's South Bay Treatment Plant. Quantifying the potential impacts of this concurrent discharge would require further analysis if this alternative were selected; however, it is likely that adding the primary effluent to the City's secondary effluent actually would further reduce the potential impact to marine water quality from this Alternative.

4.2.1.2 Mitigation

Specific measures to mitigate project-related impacts to water quality are discussed in Section 3.1 (including emergency chlorination/dechlorination to address the exceedances of coliform limits described above). No additional mitigation measures are required to reduce the potential for cumulative impacts associated with the alternatives.

4.2.1.3 Significance after Mitigation

With the implementation of project-specific mitigation measures, potential adverse cumulative impacts to local or regional water quality are not significant.

4.2.2 Biological Resources

Biological resources would be subject to cumulative impacts by the proposed alternatives if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any Alternative would adversely affect local and/or regional potentially sensitive species or critical habitats.

4.2.2.1 Impacts

As noted in Section 1.4.3 and the Ponds Phase II Study (CH2M HILL, 1997), construction and operation of the alternatives are not expected to result in loss of any sensitive species or critical natural habitat. The CMA system at the Hofer site would be constructed adjacent to the SBIWTP site in an area that has already been substantially disturbed by various human activities (CH2M HILL, 1997). Any construction-related disturbances (e.g., construction noise) would be of a transitory and temporary nature. After construction is completed, operational impacts of the CMA system are likely to be limited to sludge removal activities occurring approximately once every 10 years.

With regard to construction and operation of components of the South Bay Treatment Plant, except for localized occurrences of coastal sage scrub, there are few sensitive biological resources located at or near the plant facilities (City of San Diego, 1996). Construction of elements of the South Bay Treatment Plant, including improvements to Dairy Mart Road and bridge, are reported to result in loss of approximately 5 acres of coastal sage scrub. In conjunction with the proposed alternatives, the potential cumulative loss would be approximately 8 acres (3.24 ha). As reported in the EIR/EA for the reclamation plant and Dairy Mart Road and Bridge Improvements, this level of coastal sage scrub loss would likely fall within the City of San Diego's 5 percent interim loss allowance for which development approvals have been issued.

No direct impacts to sensitive biological resources are expected from implementation of the Coral Gate development project (City of San Diego, 1991); however, the Coral Gate project was anticipated to contribute incrementally to a significant cumulative loss of raptor foraging habitat associated with development in the San Diego region by reducing the amount of undeveloped areas within the Tijuana River valley used by raptors for hunting and foraging. As with the other projects noted, Coral Gate construction activities are expected to pose minimal and short-term impacts to other biological resources.

Although the alternatives at the Hofer site and on Spooner's Mesa would remove open space, the two sites are of marginal value as raptor habitat. Therefore, the loss of this undeveloped area would not contribute to the cumulative loss of raptor foraging area in the Tijuana River valley.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.2.2 Mitigation

Specific measures to mitigate impacts to biological resources associated with each of the alternatives are identified in Section 3.2, including acquisition of habitat offsite to mitigate the loss of 3.1 acres (1.3 ha) of coastal sage scrub habitat in the AIPS at Spooner's Mesa site. Each of the other projects considered in this analysis will also be required to provide mitigation to avoid significant impacts to sensitive species.

4.2.2.3 Significance after Mitigation

With the implementation of the mitigation measures described in Section 3.2, there should be no remaining impacts to biological resources that would contribute to cumulative impacts on such resources.

4.2.3 Cultural and Paleontological Resources

Cultural and paleontological resources would be subject to cumulative impacts by the proposed alternatives if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would eliminate or adversely affect such resources.

4.2.3.1 Impacts

Although potentially significant cultural resource sites have been identified in areas associated with certain components of the SBIWTP (RECON, 1994), as noted in Section 3.3, construction and operation of the alternatives are not expected to result in loss of or adverse impact to any archaeological, historic, or paleontological resources. With the exception of the AIPS at Spooner's Mesa and CMA at Hofer alternatives, construction would take place adjacent to the SBIWTP site in an area that has already been substantially disturbed by various human activities (Woodward Clyde, June 1997). As noted in Section 3.3.3.3, none of the 10 prehistoric archeological sites identified on Spooner's Mesa were found eligible under National Register criteria, due to their lack of integrity or potential to yield information important to prehistory or history.

Construction of the various components of the South Bay Treatment Plant is not expected to affect any prehistoric or historic cultural or archaeological resources; however, portions of the geological units associated with the South Bay Water Reclamation Plant and Dairy Mart Road alignment have a reportedly high sensitivity for paleontological resources (City of San Diego, 1996). Consequently, development of the reclamation plant and Dairy Mart Road and bridge improvements has the potential to impact paleontological resources.

Isolated artifacts collected at the Coral Gate project site reportedly are considered to be of little research value and too small to indicate the existence of significant archaeological deposits. No information is presently available on the potential for the Parallel Conveyance System project to impact paleontological or cultural resources in Mexico.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.3.2 Mitigation

Specific measures to mitigate impacts to cultural and paleontological resources associated with the proposed alternatives are discussed in Section 3.3. Because the proposed mitigation measures would fully mitigate potential impacts to cultural and paleontological resources, cumulative impacts from the alternatives in conjunction with the other proposals discussed here are unlikely.

4.2.3.3 Significance after Mitigation

Cumulative adverse impacts to cultural and paleontological resources would not be significant with the implementation of the mitigation measures identified in Section 3.3.

4.2.4 Land Use

Current land uses would be subject to cumulative impacts by the proposed alternatives if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would conflict with existing or planned land uses or land use designations.

4.2.4.1 Impacts

Implementation of proposed alternatives would not induce growth or substantial local or regional land use changes. As noted in Section 3.4, construction and operation of the alternatives would not result in loss of any prime agricultural soils and mineral resources from future production. With the exception of the AIPS at Spooner's Mesa and Advanced Primary Only alternatives, construction activities would take place adjacent to the SBIWTP site in an area that has already been substantially disturbed by various human activities (Woodward Clyde, June 1997).

Implementation of the South Bay Treatment Plant and related facilities, however, could induce growth and land use changes that would be cumulatively significant. Development of the facilities for the South Bay Treatment Plant, along with the Coral Gate project, would remove prime agricultural soils and mineral resources from future production. Because the cumulative acreage is small (approximately 285 acres [115.4 ha] total) and the development would not impact adjoining lands in use for agriculture or mineral extraction, these impacts are not considered cumulatively significant (RECON, 1994).

As noted in Section 3.4, the San Diego County Department of Parks and Recreation recently has acquired certain parcels of land in the Tijuana River valley for inclusion in the planned Tijuana Valley Regional Park, including areas along the slopes of Spooner's Mesa. The Department of Parks and Recreation has expressed the opinion that implementation of the AIPS at Spooner's Mesa alternative could constitute a land use conflict with the County's planned use as a regional park. Although a specific park boundary has not yet been determined (to avoid land speculation), the parcels recently purchased by the County are restricted to the sloped sides of Spooner's Mesa. Because implementation of the AIPS alternative would take place on top of Spooner's Mesa, no recreational land use conflict appears likely should the AIPS alternative be selected. If the option to purchase the top of Spooner's Mesa is exercised by the County, a conflict would arise if State Bond Act funds are used to purchase the property.

Spooner's Mesa is also designated as preserve lands in the City of San Diego's Subarea Plan for the Multi-Species Conservation Program. Use of Spooner's Mesa for the AIPS alternative would be a significant land use impact. There are no known similar conflicts between the other projects described here and the Subarea Plan for the Multi-Species Conservation Program. Therefore, although the conflict between the Subarea Plan and the AIPS alternative would be considered a significant land use conflict, it would not contribute to additional cumulative impacts on the Multi-Species Conservation Program.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.4.2 Mitigation

Specific measures have been identified to mitigate all land use impacts associated with the alternatives, with the exception of the conflict between the AIPS at Spooner's Mesa alternative and the City of San Diego's Subarea Plan for the Multi-Species Conservation Program. Because the other projects addressed in this section have all received land use authorizations, they can be assumed not to be in conflict with existing or future land use or land use designations. Therefore, the alternatives would not contribute to cumulative impacts to land use.

4.2.4.3 Significance after Mitigation

Even with mitigation, the AIPS at Spooner's Mesa alternative would conflict with the City of San Diego's Subarea Plan for the Multi-Species Conservation Program. No other land use impacts that would contribute to cumulative impacts have been identified.

4.2.5 Traffic and Transportation

The proposed alternatives would result in cumulative traffic and transportation impacts if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would adversely affect local and/or regional traffic flow or highway/roadway carrying capacity, causing the level of service to fall below the level "D," which is the level of service considered by the City of San Diego as a local threshold of significance for unacceptable traffic congestion.

4.2.5.1 Impacts

As noted in Section 3.5, the total estimated number of trips attributed to construction of the various alternatives for the proposed alternatives would be approximately 200 trips per day during peak construction periods. Access would be via I-5; other regional traffic/roadways would not be affected. Construction-related impacts would be short term and localized in nature, not expected to adversely affect existing or future local or regional traffic conditions. Operational traffic impacts within the United States, would be limited to 20 round trips per day for operators plus occasional supply delivery vehicles, with an additional 5 round trips per day for the Spooner's Mesa site.

No specific traffic information is available for the South Bay Secondary Treatment Plant or Sludge Processing Facility projects because these facilities would not be built for 5 or 10 years. A traffic analysis prepared for the South Bay Water Reclamation Plant and Dairy Mart Road and Bridge Improvements EIR/EA indicated that cumulative traffic impacts, taking into consideration construction of the SBIWTP and the Coral Gate project, would not degrade existing levels of service along Dairy Mart Road (City of San Diego, 1996).

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.5.2 Mitigation

Specific measures to mitigate traffic and transportation impacts associated with the proposed alternatives are discussed in Section 3.5. Because the level-of-service impacts associated with the referenced past, present, and reasonably foreseeable future actions are to remain at “D” or better, no additional mitigation measures are required to reduce the potential for cumulative impacts.

4.2.5.3 Significance after Mitigation

Potential cumulative impacts to local or regional traffic and transportation would not be significant with the proposed mitigation.

4.2.6 Socioeconomics and Environmental Justice

The proposed alternatives would result in cumulative socioeconomic impacts if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would adversely affect the local/regional economy, land values, or result in negative impacts to minority and/or low-income populations in excess of those affecting the community at large.

4.2.6.1 Impacts

As noted in Section 3.6, implementation of the proposed alternatives would not adversely affect the local/regional economy, nor would it negatively impact minority or low-income populations. Implementation of the various components of the South Bay Treatment Plant (see Section 3.6) and the Coral Gate project is expected to result in net positive impacts to the local/regional economy.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.6.2 Mitigation

Because the socioeconomic impacts associated with the proposed alternatives, in conjunction with those of the referenced past, present, and reasonably foreseeable future

actions, would not adversely affect the local or regional economy, no additional mitigation measures are required to reduce the potential for cumulative impacts.

4.2.6.3 Significance after Mitigation

Potential adverse cumulative impacts would not be significant.

4.2.7 Public Health and Safety

The proposed alternatives would result in cumulative public health and safety impacts if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would expose the public to potentially hazardous materials, wastes, pathogens, or disease carrying vectors.

4.2.7.1 Impacts

As noted in Section 3.7, implementation of the Advanced Primary Only or Partial Secondary Treatment alternatives could cause coliform levels to exceed Ocean Plan limits at depth in some kelp beds. This could result in health risks to divers.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.7.2 Mitigation

Specific measures to mitigate impacts to public health and safety associated with the proposed alternatives (including emergency chlorination/dechlorination to address the exceedances of coliform limits previously described) are discussed in Section 3.7.

4.2.7.3 Significance after Mitigation

Adverse individual or cumulative impacts to public health and safety would not change in significance from the levels of significance described in Section 3.7.

4.2.8 Recreation

The proposed alternatives would result in cumulative impacts to recreational resources if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would lead to a net loss of recreational opportunities, a displacement of recreational uses, or a degradation of recreational value.

4.2.8.1 Impacts

As noted in Section 3.8, construction and operation of the proposed alternatives would not result in loss of or preclude access to any current or planned recreational resources. With the exception of the AIPS at Spooner's Mesa alternative, most of project facilities would be constructed adjacent to the SBIWTP site in an area that has already been substantially disturbed by various human activities (Woodward Clyde, June 1997).

As noted in Section 3.4, the San Diego County Department of Parks and Recreation recently has acquired certain parcels of land in the Tijuana River valley for inclusion in the planned Tijuana Valley Regional Park. The primary goal of the park is agricultural and wildlife preservation; lands that are considered high priority for acquisition are those that presently provide viable habitat for sensitive bird species, agricultural land where sensitive bird species are also associated, and biologically marginal land for the more active uses of the park (City of San Diego, 1994). The focused planning area for the park, adopted by the County Board of Supervisors, encompasses the area west of I-5, east of Border Field State Park and Tijuana River National Estuarine Research Reserve, south of Imperial Beach. Although a specific park boundary has not yet been determined (to avoid land speculation), the parcels recently purchased by the County are restricted to the sloped sides of Spooner's Mesa and not along the top of the mesa, where the AIPS alternative would be located. Consequently, no recreational land use conflict appears likely should the AIPS alternative be selected. If the option to purchase the top of Spooner's Mesa is exercised and State Bond Act funds are used, then a conflict would arise.

The two SBIWTP with Less than Full Secondary Effluent alternatives have a potential to cause divers in kelp beds at depths below 10 meters to encounter coliform bacteria levels that exceed Ocean Plan limits during several months of the year, a significant impact.

Although construction of the South Bay Water Reclamation Plant and Dairy Mart Road improvements would result in detours for equestrians and bicyclists, these impacts would be temporary in nature. Improvements to Dairy Mart Road and bridge would result in a net benefit by enhancing access by pedestrians and equestrians. Consequently, implementation of the South Bay Treatment Plant elements would not adversely affect existing or planned recreational facilities.

Construction of the Coral Gate project is anticipated to have no impact on existing or planned recreational facilities. No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.8.2 Mitigation

Specific measures have been identified in Section 3.8 of the SEIS to mitigate the only significant recreation impacts associated with the alternatives, the potential to expose kelp divers to coliform levels exceeding Ocean Plan levels. No other significant impacts requiring mitigation are anticipated from the other projects evaluated in this section.

4.2.8.3 Significance after Mitigation

No significant impacts to recreation (either individual or cumulative) are anticipated after the implementation of mitigation for the potential impacts to kelp divers.

4.2.9 Air Quality

The proposed alternatives would result in cumulative impacts to local and regional air quality if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would result in exceedances of established state or federal air quality standards.

4.2.9.1 Impacts

As noted in Section 3.9, construction of the proposed alternatives would generate air emissions from construction vehicle exhaust, as well as particulate emissions associated with pond excavation. Operational emissions would essentially be confined to minor, temporary, and periodic emissions associated with maintenance activities and sludge transport and disposal. The additional amounts of particulates, reactive hydrocarbons, or nitrogen oxides emitted in the San Diego Air Basin, however, would not have an adverse effect on the region's ability to meet federal and state standards for ozone, as well as state standards for PM₁₀, NO_x, and CO.

Because the San Diego Air Basin is a nonattainment area for ozone precursors, any additional emissions were considered to be a cumulative impact in the 1994 Final EIS. Review of the emissions estimates for the proposed City of San Diego SBWRP indicates that if a doubling of emissions were assumed from co-terminus construction (both sites are approximately 40 acres[16.2 ha] in size) and operations, no significant air quality impacts from ozone precursors or fugitive dust emissions would result. The odor emissions study for the SBWRP indicates that the estimated odor levels from the SBWRP at the fence line of the Hofer site (6.5 odor units) would exceed City of San Diego thresholds of significance (5 odor units). The sensitive receptors who would be affected are primarily in Mexico, where there are residential land uses within 600 feet (183 m) of the southern boundary of the SBIWTP and Hofer site, which are also near Mexico's Pump Station One, an existing source of odors. The nearest residences in the United States are over 1,800 feet (550 m) to the north and east.

As with the proposed alternatives, air quality impacts likely to result from construction of facilities for the South Bay Treatment Plant will include short-term emissions from construction activities and long-term emissions associated with operations (e.g. odors from sedimentation basins and NO_x from combustion of digester gas). Development of the Coral Gate project will result in short-term construction emissions and long-term emissions from future resident vehicle emissions. Coral Gate emissions will be minimal and are anticipated to be within local and regional plans for growth.

The potential for cumulative impacts related to short-term construction emissions associated with the proposed alternatives is considered to be low because there is little overlap in construction periods of the various projects listed above. For those construction periods that would overlap with the various projects listed above, cumulative construction-related air emissions would be of short duration. In addition, the proposed alternatives, as well as other projects in the vicinity, would be subject to permitting and mitigation requirements of the San Diego Air Pollution Control District, which would minimize the potential for significant air quality impacts.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.9.2 Mitigation

Specific measures to mitigate impacts to air quality associated with the proposed alternatives are discussed in Section 3.9.

4.2.9.3 Significance after Mitigation

After implementation of the mitigation measures, individual or cumulative impacts to local or regional air quality would not be significant.

4.2.10 Geology

Environmental issues pertaining to geology/soils deal primarily with the geotechnical suitability of the specific site for the particular type of development proposed.

4.2.10.1 Impacts

Given the site/project-specific nature of this issue, there is no cumulative relationship among the sites and projects.

4.2.10.2 Mitigation

Specific measures to mitigate impacts to geological resources associated with the alternatives are discussed in Section 3.10. Because the impacts associated with the referenced past, present, and reasonably foreseeable future actions are not considered to be cumulatively significant, no additional mitigation measures are required to reduce the potential for cumulative impacts.

4.2.10.3 Significance after Mitigation

Because the visual character will not be substantially altered, adverse cumulative impacts to geological resources are not significant.

4.2.11 Scenic and Visual Resources

The proposed alternatives would result in cumulative impacts to scenic or visual resources if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would have a substantial demonstrable negative aesthetic effect, would obstruct a scenic vista or public view or impair an existing view by introducing an aesthetically offensive feature.

4.2.11.1 Impacts

Construction of the proposed alternatives would involve varying degrees of earthwork and grading activities, which would permanently alter the landscape character of any of the sites. With the exception of the AIPS at Spooner's Mesa alternative, most of the proposed structures and facilities would be constructed on or adjacent to the SBIWTP site in an area that has already been substantially disturbed by various human activities (Woodward Clyde, June 1994). Consequently, these activities/structures are not considered to adversely affect scenic viewsheds of the Tijuana River estuary, the proposed Tijuana Valley Regional Park, or local residents. The AIPS at Spooner's Mesa alternative would have structures built on the top of Spooner's Mesa, which would not be visible. The structures would not preclude recreational use of the western edge of the mesa, such as for hiking, equestrian, and mountain biking activities, as described in Chapter 3.

Development of South Bay Treatment Plant facilities also would change the existing visual character of the area by introducing structures and equipment associated with wastewater treatment and conveyance (e.g. sedimentation tanks, clarifiers, piping, etc.), as well as landform alteration from grading operations (City of San Diego, 1996). The EIR analysis for the Coral Gate project notes that the appearance of the proposed development will be implemented to complement that of existing uses in the San Ysidro community.

Cumulative development within the Tijuana River valley is not expected to alter substantially the overall visual character of the area. The eastern portion of the Tijuana River valley is currently characterized by a mix of urban and natural features. The majority of existing natural features in the valley would not be affected.

No cumulative impacts were identified for the Coral Gates project, the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.11.2 Mitigation

Specific measures to mitigate impacts to scenic and visual resources associated with the proposed alternatives are discussed in Section 3.8. Because the impacts associated with the referenced past, present, and reasonably foreseeable future actions are not considered to be cumulatively significant, no additional mitigation measures are required to reduce the potential for cumulative impacts.

4.2.11.3 Significance after Mitigation

Because the visual character will not be substantially altered, adverse cumulative impacts to scenic or visual resources are not significant.

4.2.12 Noise

The proposed alternatives would result in cumulative noise impacts if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would result in exceedances of established local noise standards/ordinances.

4.2.12.1 Impacts

As noted in Section 3.11, the primary contributor to noise impacts associated with the proposed alternatives would be related to construction equipment and traffic. Construction noise of varying levels and duration would originate from onsite grading activities, truck travel, and construction equipment. Construction of the proposed alternatives is projected to add approximately 200 vehicle trips to Dairy Mart Road. Noise impacts associated with operation of the alternatives would be minimal. Potentially sensitive noise receptors who would be affected are primarily in Mexico, where there are residential land uses within 600 feet (183 m) of the southern boundary of the SBIWTP and Hofer site, which are also near Mexico's Pump Station One, an existing source of noise. The nearest residences in the United States are over 1,800 feet (550 m) to the north and east.

As with implementation of the proposed alternatives, development of South Bay Treatment Plant facilities will result in short-term construction noise and long-term operational noise. Construction noise sources will be similar to those for the alternatives. Operational noise sources will include pumps, compressors, blowers, and other such process equipment.

Development of the Coral Gate project also will result in short-term construction noise impacts. Cumulatively significant noise impacts related to construction activities likely would be avoided or minimized because they would occur at different times and/or different locations.

No cumulative impacts were identified for the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.12.2 Mitigation

Specific measures to mitigate noise impacts associated with the proposed alternatives are discussed in Section 3.11. The impacts associated with the referenced past, present, and reasonably foreseeable future actions are short term and are not considered to be cumulatively significant. No additional mitigation measures are required to reduce the potential for cumulative impacts.

4.2.12.3 Significance after Mitigation

No significant adverse cumulative noise impacts are anticipated.

4.2.13 Energy Consumption

The proposed alternatives would result in cumulative impacts to energy resources if, in conjunction with the other past, present, and reasonably foreseeable future actions noted above, construction (short-term impacts) or operation (long-term impacts) of any alternative would result in a substantial increase in energy consumption over baseline conditions.

4.2.13.1 Impacts

As noted in Section 3.12, construction of the proposed alternatives is estimated to consume up to approximately 645,120 gallons (2.4 million liters) of fossil fuel. This amount of fuel consumption would be less than 0.8 percent of the San Diego region's annual diesel fuel consumption and would be considered insignificant. Operation of the most energy-demanding alternative would consume up to 386,000 kWh of electricity, or 0.002 percent of the San Diego region's annual electricity consumption, which would also be considered insignificant. The other projects reviewed in this section would also consume diesel fuels during construction and electricity during operation, with the South Bay Reclamation Plant and its related projects and the Coral Gate project probably involving the greatest energy use. Although specific information about the energy requirements of these other projects is not known, it is highly unlikely that even if all were to occur at the same time they would consume a significant proportion of the energy consumed in the San Diego region. Therefore, it is unlikely that the alternatives would contribute to cumulative energy consumption impacts.

No cumulative impacts were identified for the Coral Gates project, the City of San Diego Flood Control project, the IBWC Flood Control Maintenance, the INS Multi-Tiered Pilot Fence project, or the Parallel Conveyance System project in Mexico.

4.2.13.2 Mitigation

Because no significant cumulative energy consumption impacts are identified, no mitigation is required.

4.2.13.3 Significance after Mitigation

No significant cumulative energy consumption impacts have been identified.

Chapter 5

Applicable Environmental Regulations in the U.S. and Mexico

Both the U.S. and Mexico have environmental regulations that pertain to the approval for construction and management of the SBIWTP. Section 5.1 presents U.S. regulations that apply to the alternatives and describes the status of permits that may be required.

Potentially applicable Mexican regulations are discussed in Section 5.2 in consideration of the recommendation of the President's Council on Environmental Quality (McGinty, 1997) to consider transboundary effects. The United States is not required to obtain permits from Mexico for any facilities associated with the alternatives because the facilities are located in the United States. Mexican regulations are included to provide a basis for evaluating impacts to Mexico from implementing any of the alternatives. Because the sludge disposal facility will be located in Mexico, the Mexican government will apply its own laws in establishing the disposal facility.

In addition to applicable regulations, the SEIS process has included scoping, notification, and coordination activities with government agencies and the public. Appendix G of the SEIS documents these activities and comprises consultation and coordination (Appendix G1), the Notice of Intent (Appendix G2), Notice of Availability (Appendix G3), list of SEIS recipients (Appendix G4), the transcript of the public meeting held February 12, 1997 (Appendix G5), and a summary of the additional public involvement in developing criteria for evaluating the alternatives (Appendix G6).

5.1 U.S. Regulations and Permits

5.1.1 Water Resources

5.1.1.1 Surface and Groundwater Quality

Clean Water Act/National Pollutant Discharge Elimination System

Section 402 of the Clean Water Act (CWA) requires EPA to administer the federal National Pollutant Discharge Elimination System (NPDES) permit regulations for certain discharges into waters of the United States. Water quality is regulated by the NPDES permit program, which controls and reduces pollutants to water bodies from point and nonpoint discharges. In 1990, EPA promulgated regulations that required municipalities and urban counties with separate storm drainage facilities that serve populations over 100,000 to obtain NPDES permits.

The federal regulations also gave discretionary authority to the state administering agency, the CRWQCB, to require smaller municipalities to obtain NPDES permits. In addition, projects that disturb more than 5 acres of land during construction are required to file a

Notice of Intent to be covered under the State NPDES General Construction Permit for discharges of stormwater associated with construction activity.

An NPDES construction stormwater permit requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP addresses construction stormwater best management practices (BMPs) to be used during construction. BMPs are programs, technologies, operating methods, or other measures that control, prevent, or reduce pollution.

Basin Plan

The CRWQCB's Water Quality Control Plan for the San Diego Basin (1995) (Basin Plan) is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan: (1) designates beneficial uses for surface water and groundwater, (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, (3) describes implementation programs to protect the beneficial uses of all waters in the region and (4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan. Additionally, the Basin Plan incorporates, by reference, all applicable State and Regional Board plans and policies.

Beneficial uses are defined as the uses of water necessary for the survival or well-being of humans, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals of humankind.

Beneficial uses for the Tijuana River in the Tijuana River valley west of Interstate 5 include: noncontact water recreation; warm freshwater habitat; wildlife habitat; and rare, threatened, or endangered species. It is noted that the Tijuana River is exempted from the municipal beneficial use designation. Beneficial uses for groundwater in the Tijuana River valley include municipal and domestic supply, industrial service supply, and agricultural supply.

To protect the designated beneficial uses, water quality objectives have been specified by the CRWQCB. These water quality objectives are described in detail in Chapter 3 of the Basin Plan.

Approvals

An NPDES Construction Stormwater Permit (with a Pollution Prevention Plan) would be required pursuant to Section 402 of the Clean Water Act for grading of areas of more than 5 acres, which would be required in all alternatives. Existing permits would not apply to new grading. An NPDES permit would also be required for any dewatering of the project area or **nonpoint** source runoff that could occur.

5.1.1.2 Waters of the United States

Regulations

Waters of the U.S. (including wetlands) are subject to U.S. Army Corps of Engineers' jurisdiction under Section 404 of the CWA, enacted in 1972 (as amended). Section 404 regulates the filling and dredging of U.S. waters. The limits of nontidal waters extend to the ordinary high water (OHW) line, defined as the line on the shore established by the

fluctuation of water and indicated by physical characteristics such as a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter or debris, or other appropriate means. In general, ditches excavated on dry land that do not convey flows from historical streams are considered nonjurisdictional. This is determined by the U.S. Army Corps of Engineers on a case-by-case basis.

Approvals

A 404 permit would be required for project construction where pipelines cross gullies or other waters of the United States, which would occur during the crossing of Smuggler Gulch in the Advanced Integrated Pond System (AIPS) at Spooner's Mesa alternative. In accordance with informal coordination with the U.S. Army Corps of Engineers, nationwide permits would apply if the scope of the impact is limited to crossing minor streams and gullies. Previous impacts were covered by an individual permit, which expired on May 17, 1997. If applicable, new work would require a new 404 permit (likely nationwide) application.

A Water Quality Certification pursuant to Section 401 of the CWA is required for 404 permit actions. If applicable, new work would require a new request for Water Quality Certification (or Waiver thereof) from the CRWQCB.

5.1.1.3 Streams

Regulations

Section 1601 of the California Fish and Game Code protects the natural flow, bed, channel and bank of any river, stream or lake designated by the California Department of Fish and Game (CDFG) in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. General project plans must be submitted to CDFG that are sufficient to indicate the nature of a project for construction if the project would:

- Divert, obstruct, or change a streambed
- Use material from the streambeds
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream

Approvals

An existing 1601 Streambed Alteration Agreement would be revised to address any new impacts to stream courses and drainages (i.e., due to pipeline crossings of Smuggler Gulch in the AIPS at Spooner's Mesa alternative). The existing permit expires on December 31, 1998.

5.1.1.4 Marine Water Quality

Regulatory Background

The Clean Water Act (CWA) established requirements for secondary treatment by activated-sludge treatment plants in terms of biochemical oxygen demand (BOD) and total suspended solids (TSS) discharged to surface water. The CWA also establishes

secondary-equivalent standards for trickling filters and pond treatment systems. Other applicable standards are Section 402 of the federal CWA and the California Porter-Cologne Water Quality Act. The CWA established requirements for discharges to federal ocean waters in Section 503(c) and through the NPDES. In terms of discharges to the ocean, the CWA allows for modifications through the 301(h) waiver process. The EPA has delegated responsibility for NPDES permitting in California to the CRWQCB.

Through the Porter Cologne Act, the CRWQCB has authority to set waste discharge requirements. For discharges from the SBIWTP through the SBOO, the CRWQCB is applying the standards from the Ocean Plan. Waste discharge requirements and other NPDES permit requirements were incorporated into a single set of permitting documents that was issued by the CRWQCB in November 1996 (NPDES permit No. CA0108928).

In addition to these acts, the Basin Plan regulates the SBIWTP discharge. The Basin Plan was adopted by the CRWQCB and approved by the SWRCB in 1994. The Basin Plan designates narrative and numerical water quality objectives and prohibitions. It also establishes additional water quality objectives for dissolved oxygen and pH.

Ocean Plan

The California Ocean Plan was promulgated by the SWRCB to establish water quality standards in accordance with Section 303(c)(1) of the Federal Clean Water Act and Section 13170.2(b) of the California Water Code. The California Ocean Plan directly applies to State territorial marine waters and optionally applies to discharges outside of State territorial marine waters that could affect the quality of the waters of the State. The SBIWTP discharge through the SBOO is subject to the requirements of the California Ocean Plan to assure that no violation of the water quality objectives and effluent quality requirements occurs in the State territorial marine waters.

The California Ocean Plan defines beneficial uses (Chapter I), water quality objectives (Chapter II), general requirements for management of waste discharge to the ocean (Chapter III), effluent quality requirements (Chapter IV), and discharge prohibitions (Chapter V). The water quality objectives address "... limits or levels of water quality characteristics for ocean waters to ensure reasonable protection of beneficial uses and the prevention of nuisances."

Beneficial Uses

The Ocean Plan identifies beneficial uses, discharge standards, and receiving water standards for state ocean waters. The following beneficial uses are identified by the Ocean Plan:

- Industrial water supply
- Navigation
- Water contact recreation
- Noncontact water recreation
- Ocean commercial and sport fishing
- Preservation and enhancement of Areas of Special Biological Significance (ASBS)
- Preservation of rare and endangered species
- Marine habitat
- Mariculture

- Fish migration
- Fish spawning
- Shellfish harvesting
- Aesthetic enjoyment

The Basin Plan also identified beneficial uses, which are listed in the NPDES permit and are similar to the Ocean Plan beneficial uses.

Water Quality Standards in the Ocean Plan and SBIWTP NPDES Permit

Ocean Plan discharge standards address conventional and toxic water quality parameters. Numerical limits are set in Table A of the Ocean Plan for oil and grease, suspended solids, settleable solids, turbidity, pH, and toxicity. Unlike the CWA, the Ocean Plan does not establish a discharge limit for BOD. Table B of the Ocean Plan sets the basis for effluent discharge limits for toxic compounds.

The existing SBIWTP NPDES permit established numerical limits for toxic compound concentrations specific to the discharge from the SBIWTP. The specific limits are based on the Table B limits and the 100:1 dilution factor. The discharge limits are set at a level that will achieve the Ocean Plan limits outside of the zone of initial dilution.

Effluent and receiving water standards are set in the NPDES permit for bacterial, physical, chemical, biological, and radioactivity characteristics. Some of the limits are expressed qualitatively while others have numerical limits. Numerical limits are defined for bacteria (total and fecal coliform). The bacterial standards apply in specific areas of the ocean where human contact with the water can occur (i.e., coastal and kelp bed zones), and in areas of shellfish harvesting. The CRWQCB has not designated any shellfish harvesting areas in the vicinity of the SBIWTP discharge, and bacterial limits for shellfish harvesting are not applicable to this discharge.

Table 5.1-1 presents the coliform standards and monitoring requirements listed in Section C.1.8 of the NPDES permit. The average total coliform density determined at each sampling station is not to exceed 1,000 organisms per 100 mL during any 30-day period. Not more than 20 percent of the samples may exceed the count of 1,000 per 100 mL, and no single sample (when verified with a repeat sample during a 48-hour period) may exceed 10,000 organisms per 100 mL. Stricter limits for fecal coliform counts are set for samples collected near water-contact and shellfish harvesting areas.

As directed by the NPDES permit, waste-containing pathogens must be discharged a distance from designated shellfish harvesting and water-contact sport areas that is sufficient to maintain applicable bacterial standards without disinfection (Section B.7). If that distance cannot be achieved, the waste must be discharged as far as possible from use areas and reliable disinfection must be applied. The method of disinfection should not increase effluent toxicity and should result in the least hazard to human health and the environment.

In the event that exceedances of the coliform standards occur, the density of enterococcus shall be determined at all stations where coliform samples are collected (Section C.1b). If a shore station consistently exceeds a coliform objective or a geometric mean enterococcus density (24 organisms per 100 mL for a 30-day period or 12 organisms per 100 mL for a 6-month period), the CRWQCB may require the discharger to participate in a survey to determine the source of the contamination. The CRWQCB may require the discharger and

any other responsible parties it identifies to take action to control a controllable source of indicator organisms as identified during a sanitary survey.

The Monitoring and Reporting Program No. 96-50 issued in conjunction with the NPDES permit stipulates requirements for the monitoring of influent, sludge, effluent, and receiving water (Sections B through E).

Table 5.1-1

CALIFORNIA OCEAN PLAN WATER QUALITY OBJECTIVES FOR TOTAL AND FECAL COLIFORM

Area	Total Coliform	Fecal Coliform
Water-Contact Standards	1,000 per 100 mL (10 per mL)	Minimum of 5 samples in a 30-day period not to exceed the geometric mean of 200 per 100 mL (2 per mL)
	Not more than 20% of samples in a 30-day period > 1,000 per 100 mL (10 per mL)	Not more than 10% of samples in a 60-day period > 400 per 100 mL (4 per mL)
	No single sample (when verified within 48 hours with a repeat sample) > 10,000 per 100 mL (100 per mL)	
Shellfish Standards ¹		Median density not > 70 per 100 mL (0.7 per mL)
		Not more than 10% of samples > 230 per 100 mL (2.3 per mL)

¹In designated shellfish harvesting areas only; none designated in the vicinity of the SBOO.

- Influent is monitored weekly for conventional constituents, inorganic, and organic parameters.
- Sludge shall be tested twice per year for all pollutants listed under Section 307(a) of the CWA, Title 22 CCR, and 40 CFR 503.
- Effluent testing requires daily monitoring of conventional parameters, weekly testing of inorganic (and select organic) parameters as well as acute and chronic toxicity, and monthly analysis for organic constituents.
- Receiving water monitoring requires sampling of water, sediments, and biological samples. Water samples will be used for the determination of coliform density as discussed above, and the monthly testing of conventional pollutants. Benthic monitoring involves the quarterly testing of sediment samples for sediment-specific parameters (e.g., total organic carbon), metals, and organic constituents. Biological monitoring consists of the collection of benthic infaunal samples to determine the integrity of marine invertebrates communities. Furthermore, annual surveys by aerial photography are required to measure changes, if any, in the kelp beds along the San Diego coastline.

Physical standards are set qualitatively without numerical limits. The discharge of waste must not cause aesthetically undesirable discoloration of the ocean surface or floating particulates, oil, or grease. Natural light must not be significantly reduced at any point

outside the initial dilution zone. The rate of deposition of inert solids and the characteristics of the inert solids in ocean sediments must not be changed such that the benthic communities are degraded. Of the standards, only those standards that limit impacts to the physical quality of the water are used as criteria in Section 3.1.2 of this SEIS (Marine Water Quality). Standards limiting the impacts to benthic communities are applied in Section 3.2 on biological resources.

The Ocean Plan also sets standards for chemical characteristics. Some of the standards are qualitative whereas others have numerical limits. The dissolved oxygen concentration must not be depressed more than 10 percent from naturally occurring concentrations. The pH must not be altered more than 0.2 units from natural levels. Dissolved sulfide in the water near sediments must not increase significantly. Concentrations of Table B substances and organic materials within the sediment must not increase to levels that would degrade indigenous biota or marine life. Nutrients must not cause objectionable aquatic growth or degrade indigenous biota.

In addition to the standards set by the Ocean Plan, the NPDES permit has established monthly average numerical limits for BOD as expressed by 5-day carbonaceous biochemical oxygen demand (CBOD) (25 mg/L), TSS (30 mg/L), oil and grease (25 mg/L), and many toxic compounds. The numerical limits for the first three parameters are based on the operation of an activated sludge secondary treatment plant. The limits for the toxic compounds are derived from the Table B limits, taking into account the 100 to 1 dilution factor that will occur in the zone of initial dilution.

The permit incorporates discharge conditions based on the CRWQCB's requirement to develop and implement limits for influent concentrations of pollutants that could cause interference with plant processes, pass through the plant without removal, or cause worker health and safety risks. This type of requirement provides the basis for an industrial pretreatment program. The lead agencies developed a headworks allocations analysis for the advanced primary treatment plant in response to this requirement (Malcolm Pirnie, 1997). In this allocations study, 20 primary and 12 secondary pollutants of concern were identified from a comparison of raw wastewater samples to applicable regulatory criteria for effluent and sludge quality. The applicable criteria were used to develop influent concentrations known as maximum allowable headworks loading (MAHLs). The MAHLs were calculated for 16 of the primary pollutants of concern: arsenic, beryllium, cadmium, chromium, copper, cyanide, iron, lead, mercury, nickel, selenium, silver, zinc, tetrachloroethylene, phenols, and lindane. Four of the compounds underwent an alternative analysis to develop limits. These are carbon disulfide, aldrin, DDT, and PAHs.

Sensitivity and achievability analyses were conducted to determine the existing margin of safety between the MAHLs and the actual concentrations of these compounds found in the raw wastewater. Twelve of the pollutants were identified as Class I or Class II pollutants because the influent loadings of these pollutants approached or exceeded the MAHLs, or because the pollutants are listed in the National Pollutant Pretreatment Program. A safety factor of 25 percent was developed as a buffer between the MAHLs and the concentrations of Class I and Class II pollutants that could be allowed into the treatment plant to account for unusual conditions. Aldrin, DDT, PAHs, and carbon disulfide are four pollutants for which MAHL limits could not be set. Because these compounds represent risks, however, they were retained as Class III pollutants. The following monitoring levels were identified for these compounds: (1) monthly influent monitoring for PAHs and (2) weekly monitoring

for Class I, Class II, and two Class III pollutants (Aldrin and DDT). The frequency of monitoring for sludge was identified as twice per year for Class I and Class II pollutants.

NPDES Permit Status

An NPDES permit for compliance with Section 402 and Ocean Plan standards was issued by the CRWQCB on November 14, 1996 (permit No. CA108928). The SBIWTP NPDES permit authorizes discharge from a secondary wastewater treatment plant using activated sludge and includes a Cease and Desist Order by the CRWQCB for the interim advanced primary discharge. The permit expires on October 10, 2001, and must be renewed every 5 years. It could be revised (e.g., dates of compliance, sampling plan [based on MAHL], and TSS standards) to incorporate the project alternatives described in this SEIS.

In addition, the Partial Secondary Treatment alternative (see Section 1.5.4.2) and the Advanced Primary Only alternative (see Section 1.5.4.1) would require a Section 301(h) Waiver.

5.1.2 Biological Resources

Rare, threatened, and endangered flora and fauna are protected by several federal and state laws. Brief summaries of these laws are presented below:

5.1.2.1 Federal Statutes and Regulations

The Endangered Species Act (ESA) aims to conserve the nation's natural heritage for the enjoyment and benefit of current and future generations. The U.S. Fish and Wildlife Service (USFWS) coordinates ESA activities for terrestrial and freshwater species, while the National Marine Fisheries Service (NMFS) is responsible for marine and anadromous species. The ESA provides for the conservation of species that are in danger of extinction throughout all or a significant portion of their range. Section 9 of the ESA prohibits the "taking" of any listed species. Section 7 of the ESA requires any federal agency to consult with the USFWS or NMFS before undertaking any action that might adversely affect a listed species. Before the U.S. Army Corps of Engineers can issue a Section 404 permit for a project that could impact a listed species, it must obtain a Biological Opinion from the USFWS or NMFS stating that authorization of the project will "not jeopardize the continued existence of that species."

The Marine Mammal Protection Act (MMPA) establishes a federal responsibility to conserve marine mammals (i.e., sea otter, polar bear, dugong, manatee, cetaceans, and pinnipeds) and prohibits their taking and harassing. Statutes define taking as "harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill" and harass as potential injury or disturbance of marine mammals or their stock as indicated by behavioral changes (e.g., in breeding, breathing, feeding, sheltering). The USFWS comments under the Fish and Wildlife Coordination Act on federal projects and permits and licenses affecting sea otter, walrus, polar bear, dugong, and manatee. For marine mammals, the ESA and the MMPA offer similar management authority for endangered and threatened species or their stocks. Consultation occurs under Section 7 with Federal agencies to avoid, minimize, or mitigate the impacts of their activities on listed species.

The Migratory Bird Treaty Act (MTBA) implements international treaties between the U.S., Mexico, and other nations devised to protect migratory birds, any of their parts, eggs, and

nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping unless expressly authorized in the regulations or by permit. A list of birds covered by the Act is contained in 50 CFR 10.

5.1.2.2 State Statutes and Regulations

The California Endangered Species Act (CESA) generally parallels the main provisions of the federal ESA. CESA prohibits the taking of listed species except as otherwise provided in State law and requires consultation for the implementation of public projects that could potentially impact protected species or their habitat. Unlike its federal counterpart, CESA applies the take prohibitions to species petitioned for listing (state candidates). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations.

The California Ocean Plan sets biological characteristics and quantitative standards. Marine communities (vertebrates, invertebrates, and plant species) must not be degraded. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption must not be altered. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption must not bioaccumulate to levels that are harmful to human health. The single standard for radioactivity states that radioactive waste must not degrade marine life.

5.1.2.3 Approvals

Federal Coordination

The project would enter into the Section 7 process if construction or ongoing maintenance might have an adverse effect on federally listed species. If the Advanced Integrated Pond System at Spooner's Mesa alternative were selected, Section 7 consultation could be required for potential indirect noise impacts to the California gnatcatcher during construction of pipelines or ponds, or for roads that may affect habitat. The Biological Opinion developed for initial construction of the treatment plant does not have an expiration date. If Section 7 consultation is required, a revised Biological Opinion for this SEIS could be issued.

State Coordination

A 2080 permit for protection of state-listed endangered species could be required for the Advanced Integrated Pond System at Spooner's Mesa alternative. The CDFG did not require a 2080 permit for previous actions; rather, the USFWS Biological Opinion was determined by the state to be adequate.

5.1.3 Cultural and Paleontological Resources

5.1.3.1 Historical Sites

Federal actions are subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966 (36 CFR 800.1). The federal agency involved in the proposed action is required, in consultation with the State Historic Preservation Officer (SHPO), to make a reasonable and

good faith effort to identify historic properties that may be affected by the undertaking and gather sufficient information to evaluate the eligibility of the properties for the National Register of Historic Places (NRHP) (36 CFR 800.4). The basic steps in the Section 106 process are:

- Identify and evaluate properties within a project's area of potential effect (APE) for eligibility for NRHP listing [36 CFR 60.4]
- Assess the project's effects on cultural resources listed or determined eligible for listing on the NRHP [36 CFR 800.9(a)]

Under 36 CFR 800.9(a), a project is considered to have an effect on a historic property if the project will alter features of the property's location, setting, or use relevant to determining NRHP eligibility. If no project-related effect is found to exist, a No Effect Determination is made. If an effect is found, Criteria of Adverse Effect [36 CFR 800.9(b)] are applied.

5.1.3.2 Approvals

As a federal undertaking, this project is subject to Section 106 of the NHPA. To implement Section 106 requirements for the project, a Programmatic Agreement (PA) has been established that guides the cultural resource (archaeological, historical, and cultural properties) management for actions discussed in this SEIS (see Appendix F, Cultural Resources Assessment). New coordination with the SHPO could be required for alternatives involving new project elements.

5.1.4 Land Use

NEPA requires that an EIS discuss: (1) "possible conflicts between the proposed action and the objectives of Federal, regional, State, and local ... land use plans, policies, and controls for the area concerned" [40 C.F.R. § 1502.16(c)]; and (2) "any inconsistency of a proposed action with any approved State or local plan and laws" and, where such an inconsistency exists, "describe the extent to which the agency would reconcile its proposed action with the plan or law" [40 C.F.R. § 1506.2(d)].

5.1.4.1 Regulations

Land use plans and policies that apply to the project alternatives include:

- Coastal Zone Management Act
- California Coastal Act
- Tijuana River Valley Plan and Local Coastal Program Addendum
- City of San Diego Sub-Area Plan for the Multi-Species Conservation Program
- Tijuana River National Estuarine Sanctuary Management Plan
- Concept Plan for the Tijuana River Valley Regional Open Space Park

The Coastal Zone Management Act (CZMA) requires federal permit applicants to obtain a certification that verifies activities proposed within the "coastal zone" are consistent with state coastal zone management programs; e.g. federal Clean Water Act and §404 applicants. The CZMA creates a broad program based on land development controls within coastal zones, incorporating state involvement through the development of programs for

comprehensive state management. The CZMA also requires federal agencies or licensees to carry out their activities in such a way that they conform to the maximum extent practicable with a state's coastal zone management program.

The California Coastal Act (CCA) is California's coastal zone management program. The CCA establishes California Coastal Commission (CCC) as having jurisdiction over California's "coastal zone." There are several different types of federal projects that the CCC may be called on to review:

- An activity conducted or supported by a federal agency
- Development projects undertaken by a federal agency
- Activities by private parties authorized by a federal agency's issuance of licenses and permits

The consistency of the project alternatives with local land use plans and policies is discussed in Section 3.4.

5.1.4.2 Approvals

As discussed in Section 3.4, with the exception of the Advanced Integrated Pond System at Spooner's Mesa Site, the alternatives are consistent with all plans and policies. The Advanced Integrated Pond System at Spooner's Mesa Site would be inconsistent with the Border Highlands Local Coastal Program, which designates Spooner's Mesa as a sand and gravel extraction reserve area, and with the Sub-Area Plan for the Multi-Species Conservation Program, which designates Spooner's Mesa as preserve lands. This alternative would require amendments to the Border Highlands Local Coastal Program and to the Sub-Area Plan for the Multi-Species Conservation Program.

All project alternatives would require a finding of consistency with the CCA. The lead agencies will submit a new Coastal Consistency Determination (CCD) as part of this SEIS. The Commission could then either concur or object to the proposed action. The previous CCD and Negative Determinations would be referenced, but new coordination would be required for most alternatives.

5.1.5 Public Health and Safety (Hazardous Wastes)

5.1.5.1 Regulations

Three sets of regulations, each discussed below, relate to the protection of public health and safety and the management and disposal of hazardous (sludge) waste:

- California RCRA and Non-RCRA Hazardous Waste regulations
- California Hazardous Waste Operations and Emergency Response (HAZWOPER) standards
- Federal Standards for the Use or Disposal of Sewage Sludge (40 CFR 503)

California RCRA and Non-RCRA Hazardous Waste Regulations

There are two sets of interrelated and complementary hazardous waste management regulations intended to protect human health and the environment. The regulations pertain to the RCRA and apply in California: (1) RCRA Hazardous Waste regulations and (2) Non-RCRA Hazardous Waste regulations. RCRA Hazardous Waste Subtitle C of RCRA (1976, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 USC Sections 6901 and implemented through EPA regulations in 40 CFR Part 261 et seq.) provides the regulatory framework established to protect human health and the environment from the effects of improper management of hazardous waste. Only wastes determined to be hazardous are subject to Subtitle C regulations. RCRA defines hazardous wastes in terms of properties of a solid waste; therefore, if a waste is not a solid waste, it cannot be a hazardous waste as defined by RCRA.

All RCRA hazardous wastes, as defined under EPA regulations, are considered hazardous under state law and are regulated within California by the DTSC under the California Hazardous Waste Control Law (California Health and Safety Code Sections 25100 et seq., implemented through DTSC regulations in Title 22, California Code of Regulations [CCR], Division 4.5, Chapters 10 through 45).

Non-RCRA Hazardous Waste

California defines non-RCRA hazardous waste as "all hazardous waste regulated in the State, other than RCRA hazardous waste." California classifies waste as non-RCRA hazardous waste based on:

- A list of presumptive hazardous waste constituents
- Several characteristic tests for ignitability, reactivity, corrosivity, and toxicity
- Other characteristics defined in 22 CCR 66261.101

After materials have been designated as hazardous wastes, they are subject to strict regulation from the point of origin to the point at which they are ultimately destroyed or placed in long-term storage, such as in a federally approved treatment, storage, or disposal facility.

California Hazardous Waste Operations and Emergency Response Standards

The California Hazardous Waste Operations and Emergency Response (HAZWOPER) standards issued by the California Occupational Safety and Health Administration (Cal-OSHA) may apply for the protection of workers if the waste is determined to be hazardous. The standards are discussed below.

HAZWOPER Standards

The state standards in 8 CCR 5192 are virtually identical to the federal requirements in 29 CFR 1910.120 (California Chamber of Commerce, 1997). The standards require training, medical surveillance, and other safety measures to ensure the safety of workers engaged in hazardous waste handling, cleanup, and emergency response actions.

Hazardous waste generators that treat, store, or dispose of hazardous waste on site need to comply with the requirements of Division 4.5, Chapter 15 (i.e., 22 CCR 66265) of the California Hazardous Waste regulations (22 CCR 66262 [10][h]). The state OSHA standards in 8 CCR 5192 apply to facilities required to comply with 40 CFR 265, which is equivalent to

22 CCR 66265; therefore, the regulation would be applicable to the facility if the sludge were determined to be hazardous.

Employees of treatment, storage, and disposal facilities must be trained in the handling of hazardous waste pursuant to 8 CCR 5192 (a)(1)(d). The following programs must be developed and implemented by the employer:

- Safety and health
- Hazard communication
- Medical surveillance
- Decontamination
- New technology
- Material handling
- Training
- Emergency response

New employees shall participate in the 24-hour OSHA training whereas current employees shall complete the 8-hour refresher training if they can demonstrate sufficient knowledge in handling hazardous waste based on their work experience or previous training.

In addition, the facility must prepare an emergency response plan. The facility staff shall be trained in the First Responder Awareness Level for the accurate recognition of an emergency, and the initial response actions of sounding the alarm and evacuating, if necessary. If designated emergency responders (e.g., the local fire department) respond to the emergency, no further emergency response training is required. Small incidents (i.e., spill and releases that employees can safely and effectively control within their immediate work area) do not require additional HAZWOPER training.

If the facility maintains its own emergency response team for incidents that cannot be safely and effectively controlled by facility staff, HAZWOPER standards require:

- Designation of personnel for specific emergency response tasks and training requirements
- Written emergency response procedures
- Chemical protective equipment
- Medical surveillance and consultation
- Post-emergency response operations

These requirements also apply to responders to facility emergencies who are not part of the facility staff (e.g., contracted emergency response teams).

Standards for the Use or Disposal of Sewage Sludge

The federal Standards for the Use or Disposal of Sewage Sludge (40 CFR 503) establish numerical, management, and operational standards for nonhazardous sludge that is applied to land, placed on a surface disposal site, or fired in a sewage sludge incinerator. These standards apply to the sludge itself, the land where sludge is applied or disposed, the

exhaust gas from an incinerator, and to the persons and facilities responsible for sludge handling or disposal by any of these three methods (CH2M HILL, 1993).

If the sludge is determined to be nonhazardous and is placed in a surface landfill, the provisions applicable to the facility would be Subpart A, General Provisions; Subpart C, Surface Disposal; and Subpart D, Pathogens and Vector Attraction Reduction. Subparts B and E would not be applicable; these parts address land application (e.g., use of sludge as a fertilizer) and incineration, respectively.

Subpart A, General Provisions discusses permit requirements. Treatment works treating domestic sewage must submit a permit application pursuant to NPDES regulations (40 CFR 112.21). Site-specific pollutant limits and monitoring requirements may be stipulated in the permit. Subpart C presents the following requirements:

- Siting of surface disposal sites, e.g., exclusion of locations near Holocene faults or in wetlands
- Minimum pollutant limits for arsenic, chromium, and nickel (see Table 5.1-2)
- Groundwater monitoring for nitrogen
- Management practices including those for the protection of threatened and endangered species and their habitat, run-off and flood management, cover placement and protection, and public access
- Pathogen control
- Preparation and implementation of closure plans

Subpart D presents the requirements for management of sludge for pathogen and vector control including the maintenance of temperature and pH for specified lengths of time as well as monitoring requirements.

Table 5.1-2
POLLUTANT LIMITS FOR SURFACE DISPOSAL UNITS
WITHOUT A LINER AND LEACHATE COLLECTION SYSTEM

Pollutant	Concentration (mg/kg, dry weight basis)
Arsenic	73
Chromium	600
Nickel	420

Stricter concentration limits apply for facilities where the active sludge unit boundary is located less than 150 meters (492 feet) from the property line.

Source: CH2M HILL, 1993.

5.1.5.2 Approvals

California RCRA and Non-RCRA Hazardous Waste Regulations

If hazardous waste is generated in the course of constructing or operating an alternative, the wastewater treatment facility would obtain an EPA generator identification number, comply with any applicable regulations requiring permits (e.g., for TSDF), plans (e.g., emergency preparedness), record keeping, training (e.g., preparing hazardous waste manifests, hazardous waste management), and containment (e.g., for storage).

HAZWOPER Standards

No approvals are required, but the appropriate training must be conducted.

Standards for the Use or Disposal of Sewage Sludge

Sludge pollutant limits and monitoring requirements are issued as part of NPDES permits. The facility has NPDES permit No. CA108928 that includes such requirements.

5.1.6 Air Quality

5.1.6.1 Federal Clean Air Act

The federal Clean Air Act was enacted in 1970 and amended in 1977 and 1990 [42 U.S.C. 7506(c)]. In 1971, the EPA promulgated national ambient air quality standards. The six pollutants of primary concern for which national standards have been established are sulfur dioxide, lead, carbon monoxide, nitrogen dioxide, ozone, and suspended particulate matter (PM_{10}).

California has adopted stricter standards than those specified by the EPA. In San Diego, the AQAP is the 1991/1992 Regional Air Quality Strategies (RAQS) and Transportation Control Measures (TCMs).

The EPA allows the states the option to develop different (i.e., stricter) standards, which the California Air Resources Board (CARB) has adopted. Federal and California standards for air quality are shown in Table 5.1-3.

Table 5.1-3
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS
Maximum Concentration Averaged Over Specified Time Period

Pollutant	State Standard	Federal Standard
Oxidant (ozone)	0.09 ppm (180 $\mu\text{g}/\text{m}^3$) 1 hr	0.12 ppm (235 $\mu\text{g}/\text{m}^3$) 1 hr
Carbon monoxide	9.0 ppm (10 mg/m^3) 8 hr	9 ppm (10 mg/m^3) 8 hr
Carbon monoxide	20.0 ppm (23 mg/m^3) 1 hr	35.0 ppm (40 mg/m^3) 1 hr
Sulfur dioxide	0.04 ppm (105 $\mu\text{g}/\text{m}^3$) 24 hr	0.03 ppm (80 $\mu\text{g}/\text{m}^3$) annual average
Nitrogen dioxide	0.25 ppm (470 $\mu\text{g}/\text{m}^3$) 1 hr	0.053 ppm (100 $\mu\text{g}/\text{m}^3$) annual average

Table 5.1-3
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS
 Maximum Concentration Averaged Over Specified Time Period

Pollutant	State Standard	Federal Standard
Oxidant (ozone)	0.09 ppm (180 $\mu\text{g}/\text{m}^3$) 1 hr	0.12 ppm (235 $\mu\text{g}/\text{m}^3$) 1 hr
Lead	1.5 $\mu\text{g}/\text{m}^3$ 30-day average	1.5 $\mu\text{g}/\text{m}^3$ calendar quarter
Suspended particulate matter (PM ₁₀)	50 $\mu\text{g}/\text{m}^3$ 24 hr	150 $\mu\text{g}/\text{m}^3$ 24 hr

SOURCE: State of California, 1994
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 mg/m^3 = milligrams per cubic meter

The San Diego Air Pollution Control District (APCD) is the agency that regulates air quality in the SDAB. The APCD has prepared the updated 1991/1992 Regional Air Quality Strategies (RAQS) in response to the requirements set forth in Assembly Bill (AB) 2595. The updated draft was adopted, with amendments, on June 30, 1992 (County of San Diego, 1992). The required triennial update of the RAQS was adopted on December 12, 1995. The RAQS and transportation control measures (TCM) plan set forth the steps needed to accomplish attainment of state and federal ambient air quality standards.

The APCD has also established a set of rules and regulations initially adopted on January 1, 1969. The rules and regulations, reviewed and updated periodically, define requirements regarding stationary sources of air pollutants and fugitive dust.

5.1.6.2 California Air Resource Board Guidelines

For short-term emissions of criteria pollutants (e.g., construction emissions), the SCAQMD has established daily emissions significance thresholds (Table 5.1-4). These thresholds have generally been accepted by the San Diego APCD. The CEQA Air Quality Handbook (SCAQMD, 1993) also provides a screening table to determine whether a proposed project has the potential to generate construction-related emissions greater than the standards. For long-term emissions of criteria pollutants, the direct impacts of a project can be measured by the degree to which the project is consistent with regional plans to improve and maintain air quality. The regional plan for San Diego is the 1991/1992 RAQS and attached TCM plan. The CARB provides criteria for determining whether a project conforms with the RAQS (State of California, 1989), including the following provisions:

- Is a regional air quality plan implemented in the project area?
- Is the project consistent with the growth assumptions in the regional air quality plan?
- Does the project incorporate all feasible and available air quality control measures?

The project alternatives are located in the SDAB, which is covered by the 1991/1992 RAQS as indicated above. Additionally, none of the proposed alternatives is growth inducing; therefore, Criteria 1 and 2 above are satisfied. Air quality control measures are discussed in Section 3.9 of this SEIS. The San Diego APCD is responsible for issuing air quality permits for operation of the SBIWTP.

Table 5.1-4
SIGNIFICANCE THRESHOLDS

Source and Pollutant	Threshold
Operation	
ROC	55 lb/day (20.5 kg/day)
NO _x	55 lb/day (20.5 kg/day)
CO	550 lb/day (205 kg/day)
PM ₁₀	150 lb/day (56 kg/day)
SO _x	150 lb/day (56 kg/day)
Construction	
ROC	2.5 tons/qtr or 75 lb/day (2.3 tons/qtr or 28 kg/day)
NO _x	2.5 tons/qtr or 100 lb/day (2.3 tons/qtr or 37.3 kg/day)
CO	24.75 tons/qtr or 550 lb/day (22.5 tons/qtr or 205 kg/day)
PM ₁₀	6.75 tons/qtr or 150 lb/day (6.1 tons/qtr or 56 kg/day)
SO _x	6.75 tons/qtr or 150 lb/day (6.1 tons/qtr or 56 kg/day)

SOURCE: SCAQMD 1993: 6-2 and 6-4

ROC = reactive organic compounds; NO_x = nitrogen oxides

CO = carbon monoxide; PM₁₀ = 10-micron particulates

SO_x = sulfur oxides

Odor emissions fall under the APCD's "nuisance" rule and are not subject to quantitatively based regulations. Complaints about odor would be investigated by the SCAQMD to determine whether a violation of air quality rules has occurred.

5.1.6.3 Approvals

The construction contractor would be responsible for obtaining a valid authority-to-construct permit prior to construction. If necessary, a conformity determination will be prepared.

SBIWTP has an air permit for current operations; expansion of operations under any of the alternatives would require a modification of the permit. The air quality control measures that would be employed for each alternative are discussed in Section 3.9 of this SEIS.

5.1.7 Noise

The City of San Diego has established a noise ordinance to regulate construction and operation noise on various types of land uses (City of San Diego, 1984 and 1985). According to Section 59.5.0404 of the ordinance, the specified noise level standard for construction near residential receptors is 75 decibels (dBA) L_{eq}. This noise level limit is a 12-hour average for the hours 7:00 a.m. to 7:00 p.m. and is applied at the residential property line through the surrounding areas.

For operational noise, the City of San Diego's noise ordinance specifies 1-hour average noise level limits for noise produced at the boundaries of different types of land uses.

Agricultural and manufacturing land has a noise level limit of 75 dBA L_{eq} for any hour of the day. Residential areas zoned R-2 have a 1-hour average noise level limit of 55 dBA L_{eq} during the hours of 7:00 a.m. to 7:00 p.m., 50 dBA L_{eq} during the hours of 7:00 p.m. to 10:00 p.m., and 45 dBA L_{eq} during the hours of 10:00 p.m. to 7:00 a.m.

Traffic noise standards are established by the City of San Diego Noise Element of the General Plan. The transportation noise standard for residential properties is 65 CNEL. For industrial and agricultural areas, the transportation noise level standard is 75 CNEL.

As described in Section 3.11 of this SEIS, all alternatives are expected to comply with the City of San Diego noise ordinance and General Plan noise standard. No approvals related to noise would be required.

5.2 Mexican Regulations and Permits

The Council on Environmental Quality (CEQ), under the Executive Office of the United States President, issued a recommendation (McGinty, 1997) stating that to be consistent with NEPA, transboundary effects to the environment potentially resulting from proposed federal actions taking place in the United States should be considered. Available Mexican regulations are included to provide a basis for evaluating impacts to Mexico from the alternatives. The Mexican government, however, would need to comply with its own laws in establishing a sludge disposal facility, or any other project related to the expansion to secondary treatment for the SBIWTP.

To comply with the spirit of the CEQ guidance, this section presents summaries of descriptions of available Mexican environmental law. Two sources were consulted:

- The publication “Environmental Management for Mexican Industry (including Maquiladoras)” (Stuckey and Monasterio, 1997)
- The internet website of the Commission for Environmental Cooperation concerning Mexican laws and standards (CEC)

Additional information was obtained from the SWRCB and from CH2M HILL.

5.2.1 Legal Framework

Mexico’s first environmental law was passed in 1972 and was superseded by passage of the General Law on Ecological Equilibrium and Environmental Protection (Ley General del Equilibrio Ecológico y la Protección al Ambiente, or LGEEPA) enacted on January 28, 1988. LGEEPA was amended in 1996 by the Environment, Natural Resources, and Fisheries Secretariat (Secretaría del Medio Ambiente, Recursos Naturales y Pesca, or SEMARNAP), the Mexican federal agency equivalent to the U.S. EPA. The law protects natural biological resources, water and air quality; regulates hazardous substances and uses of nuclear power; addresses nuisances such as noise, odors, and visual impacts; and describes requirements for social participation and the distribution of environmental information. LGEEPA also encompasses the Official Mexican Standards (Norma Oficial Mexicanas, or NOMs) devised by SEMARNAP and other environmental resource agencies, such as the National Water Commission (Comisión Nacional del Agua, or CNA).

5.2.2 New Facility Environmental Review and Permitting Process

A new facility in Mexico requires preparation of an application for construction of the facility. This application is filed with the SEMARNAP or with the State Department of Ecology (Dirección General de Ecología, or DGE). Filing the application with DGE is a

direct result of the decentralization process for the federal agency SEMARNAP. This is the case for the sludge disposal facility for the biosolids produced by the SBIWTP that will be disposed in the City of Tijuana. After the review of the application, the DGE may require preparation of an Environmental Assessment Document (Manifestación de Impacto Ambiental, or MIA), to describe operation of the processes used at the facility, identify potential environmental impacts and recommend mitigation measures to minimize environmental impacts. In addition, if the operations of the facility are considered to pose a risk as a result of the handling of hazardous materials, the Department of Ecology may require a risk assessment study. Based on the information provided, the DGE may approve, conditionally approve, or report the proposed operation. Operations permits are valid for 1 year.

5.2.2.1 Permits/Approvals

Operating facilities must obtain an Environmental Permit issued by SEMARNAP through the Integrated System of Direct Regulations and Environmental Procedures. The system consists of the following:

- A one-step environmental license, which is essentially an operating permit containing provisions for water use, wastewater discharge, air emissions, and the generation/management of hazardous waste. This permit is required of new facilities as well as of existing facilities planning changes in facility operations or structure (e.g., in process, location, or equipment).
- An environmental performance report, which is prepared annually and presents data on air emissions, and generation and disposal of wastewater and hazardous waste.
- A voluntary program for environmental procedures, which is a self-regulation tool aiming “to promote the development of the industrial environmental procedures capacity to achieve an integral, continuous, increasing, and voluntary protection of the environment” (ERM, 1997).

A registration requirement exists for hazardous waste handling facilities. A hazardous waste registration is required if hazardous waste is managed at a facility. Stipulations include implementation of a hazardous waste training program, documentation of accreditation of a hazardous waste technician, and an emergency response program for the hazardous waste.

5.2.3 Wastewater Regulations

The regulations concerning wastewater would apply to a facility in Mexico that discharges wastewater to a water body or to the municipal sewer.

5.2.3.1 Permits/Registrations

The regulations differentiate between wastewater discharges to the municipal sewers and those leading to national bodies of water and properties. For the former, a Wastewater Discharge Registration Application must be submitted to the appropriate municipality to register the discharge. The latter must be authorized by CNA through approval of the

Wastewater Permit Application and registered for fee payment through the Fee Registration Application.

Industrial discharges must request that CNA issue Particular Conditions of Discharge (CPDs) including parameter-specific discharge limits, and frequency of sampling, analysis, and reporting. These discharge conditions may be more stringent than limits set by the NOMs.

Fees assessed for discharges may be waived if the two CPDs or applicable NOMs are met. Fees may be waived for up to 2 years if a schedule, plan, and budget for addressing the discharge quality are submitted to CNA with a request to approve the waiver of fees.

5.2.3.2 NOMs

NOMs include:

- Maximum permissible limits of pollutants in wastewater discharges into national bodies of water and properties (NOM-001-ECOL-1996)
- Maximum permissible limits of pollutants in wastewater discharges from industry, agroindustrial activities, services, and wastewater treatment to urban or municipal drainage and sewerage systems (NOM-031-ECOL-1993). Discharge limits to municipal sewer systems are listed in Table 5.2-1.
- CPDs that have more stringent limits than the ones provided in Table 5.2-1 or in addition to them. These conditions include discharge limits for:
 - Color
 - Total Phosphorous
 - Sulfides
 - Total Nitrogen
 - Alkalinity
 - Total Dissolved Solids
 - Toxic Organics
 - Biochemical Oxygen Demand
 - Chemical Oxygen Demand
 - Total Suspended Solids
 - Heavy Metals not included in NOM-031
 - Hydrocarbons not included in Toxic Organics
- Ecological criteria for water quality (CE-001/89)

Table 5.2-1
WASTEWATER DISCHARGE NOM-031-ECOL/1993
STANDARDS FOR GENERAL INDUSTRY

Parameters	Maximum Permissible Limits	
	Daily Average	Instantaneous
Temperature—Celsius		40.00
pH Units	6-9	6-9

Table 5.2-1
WASTEWATER DISCHARGE NOM-031-ECOL/1993
STANDARDS FOR GENERAL INDUSTRY

Parameters	Maximum Permissible Limits	
	Daily Average	Instantaneous
Settleable Solids (m/L)	5.00	10.00
Oils and Greases (mg/L)	60.00	100.00
Conductivity (micro mhos/cm)	5000	8000
Aluminum (mg/L)	10.00	20.00
Arsenic (mg/L)	0.5	1.00
Cadmium (mg/L)	0.50	1.00
Cyanide (mg/L)	1.00	2.00
Copper (mg/L)	5.00	10.00
Hexavalent Chromium (mg/L)	0.50	1.00
Total Chromium (mg/L)	2.50	5.00
Fluoride (mg/L)	3.00	6.00
Mercury (mg/L)	0.01	0.02
Nickel (mg/L)	4.00	8.00
Silver (mg/L)	1.00	2.00
Lead (mg/L)	1.00	2.00
Zinc (mg/L)	6.00	12.00
Phenols (mg/L)	5.00	10.00
Methylene—Blue Reactive Substances (mg/L)	30.00	60.00

*Not NOM-031-ECOL/1993 parameters. These are typical values assigned by CNA for direct discharges.

On January 6, 1997, SEMARNAP published the NOM-001-ECOL-1996. This NOM revised allowable limits of contaminants in wastewater discharged directly into national waters, including rivers, artificial and natural lakes, ocean waters, agricultural irrigation and into wetlands. NOM-001-ECOL-1996 replaced all the "categorical NOMs" that were set in previous years for specific industries (e.g., NOM-005-ECOL-1993, which established the maximum allowable discharge limits for contaminants in wastewater from the fabrication of plastics and synthetic polymers, was replaced). The compliance schedules for municipal and nonmunicipal wastewater discharges to national waters are shown in Tables 5.2-2 and 5.2-3, respectively. The applicable limits for discharge to coastal waters are shown in Tables 5.2-4 and 5.2-5.

Table 5.2-2
COMPLIANCE SCHEDULE FOR MUNICIPAL DISCHARGES TO NATIONAL WATERS UNDER NOM-001-ECOL-1996

Date of Compliance	Population
January 1, 2000	>50,000
January 1, 2005	≥ 20,001-50,000
January 1, 2010	≥2,501-20,000

Table 5.2-3

COMPLIANCE SCHEDULE FOR NONMUNICIPAL DISCHARGES TO NATIONAL WATERS UNDER NOM-001-ECOL-1996

Date of Compliance	Mass Loading	
	BOD₅, tons/day	TSS, tons/day
January 1, 2000	> 3.0	> 3.0
January 1, 2005	1.2 to 3.0	1.2 to 3.0
January 1, 2010	< 1.2	< 1.2

Table 5.2-4
MONTHLY AND DAILY CONCENTRATION LIMITS FOR CONVENTIONAL CONTAMINANTS DISCHARGED TO COASTAL WATERS NOM-001-ECOL-1996

Parameters mg/L¹	Coastal Waters					
	Fishing, Navigation, and Other Uses		Recreation		Estuaries	
	Monthly Average	Daily Average	Monthly Average	Daily Average	Monthly Average	Daily Average
Temperature, °C	40	40	40	40	40	40
Grease and Oils	15	25	15	25	15	25
Floating Material	ND	ND	ND	ND	ND	ND
Total Settleable Solids (ml/L)	1	2	1	2	1	2
Total Suspended Solids	100	175	75	125	75	125
BOD ₅	100	200	75	150	75	150
Total Nitrogen	--	--	--	--	15	25
Total Phosphorous	--	--	--	--	5	10

ND = not detectable

¹Except where indicated**Table 5.2-5**
MONTHLY AND DAILY CONCENTRATION LIMITS FOR HEAVY METALS AND CYANIDE DISCHARGED TO COASTAL WATERS NOM-001-ECOL-1996

Parameters mg/L	Coastal Waters					
	Fishing, Navigation, and Other Uses		Recreation		Estuaries	
	Monthly Average	Daily Average	Monthly Average	Daily Average	Monthly Average	Daily Average
Arsenic	0.1	0.2	0.2	0.4	0.1	0.2
Cadmium	0.1	0.2	0.2	0.4	0.1	0.2
Cyanide	2.0	2.0	2.0	3.0	1.0	2.0
Copper	4.0	6.0	4.0	6.0	4.0	6.0
Chrome	0.5	1.0	1.0	1.5	0.5	1.0
Mercury	0.01	0.02	0.01	0.02	0.01	0.02
Nickel	2.0	4.0	2.0	4.0	2.0	4.0

Table 5.2-5**MONTHLY AND DAILY CONCENTRATION LIMITS FOR HEAVY METALS AND CYANIDE DISCHARGED TO COASTAL WATERS
NOM-001-ECOL-1996**

Parameters mg/L	Coastal Waters					
	Fishing, Navigation, and Other Uses		Recreation		Estuaries	
	Monthly Average	Daily Average	Monthly Average	Daily Average	Monthly Average	Daily Average
Lead	0.2	0.4	0.5	1.0	0.2	0.4
Zinc	10.0	20.0	10.0	20.0	10.0	20.0

In addition to the parameters shown in Tables 5.2-4 and 5.2-5, the following NOM-001-ECOL-1996 limits must be met for pH, pathogens and parasites:

- pH should be between 5 and 10
- Daily average fecal coliform limit of 2,000 (most probable number per 100 milliliters [MPN/100 mL])
- Monthly average fecal coliform limit of 1,000 (MPN/100 mL)
- One helminth egg per liter for effluent used in restricted irrigation or 5 helminth eggs per liter for effluent used in nonrestricted irrigation

SEMARNAP has revised the discharge limits for discharges to municipal wastewater collection systems. The new limits were issued in draft form on January 9, 1997, in NOM-002-ECOL-1996. This document has been available for public review and it is expected that it will be published as a final NOM by the end of January 1998. The compliance schedule for discharges regulated by NOM-002-ECOL-1996 is presented in Table 5.2-6. The maximum permissible limits for contaminants in the wastewater discharged to a municipal sewer collection system are shown in Table 5.2-7.

Table 5.2-6**COMPLIANCE SCHEDULE FOR DISCHARGES TO WASTEWATER COLLECTION SYSTEMS
NOM-002-ECOL-1996**

Date of Compliance	Population
January 1, 1999	≥ 50,000
January 1, 2004	≥ 20,000
January 1, 2009	≥ 2,500

Table 5.2-7**MAXIMUM ALLOWABLE DISCHARGE LIMITS FOR CONVENTIONAL CONTAMINANTS TO WASTEWATER
COLLECTION SYSTEMS
NOM-002-ECOL-1996**

Parameter	Monthly Average mg/L	Daily Average mg/L
Grease and Oils	50.0	100.0
Settleable Solids (ml/L)	5.0	10.0
Arsenic	0.5	1.0
Cadmium	0.5	1.0
Cyanide	1.0	2.0
Copper	10.0	20.0
Chromium	2.5	5.0
Mercury	0.01	0.02

In addition to the parameter concentrations given in Table 5.2-7, the following limits are applicable under NOM-002-ECOL-1996:

- pH must be between 6 and 10.
- Maximum instantaneous temperature is 40° C, but higher temperatures may be allowed if a study is completed to demonstrate no adverse impacts to the wastewater system.
- Floating material should not be present.
- Hazardous materials or wastes shall not be discharged into the system, in accordance with NOMs.
- Municipalities can establish local discharge conditions for discharges into their sewer collection system in order to:
 - provide more stringent limits to the contaminants presented in Table 5.2-7
 - add maximum permissible limits for contaminants not included in this NOM.

This last is basically establishing the conditions and requirements for a local pretreatment program and the discharge conditions must be supported by studies completed by the municipality or the affected parties.

5.2.3.3 Reporting, Record Keeping, and Best Management Practices

Best management practices (BMPs) include facilitywide water-use inventories to identify, quantify, and characterize wastewater sources. This includes facility influent and stormwater. Complaints regarding water quality in the vicinity of the facility will be investigated by the facility, and any deficiencies will be corrected. Records of all correspondence with regulatory agencies, sampling records and results, wastewater discharge reports, permits, and proof of fee payments should be maintained at the facility.

5.2.4 Biological Resources

Mexico has no single law that regulates biological diversity or wildlife. Protection and management of wildlife regulations are instead established in pieces of legislation: the

LGEEPA; the Federal Fisheries Law (Ley Federal de Pesca) and the Regulation to the Federal Fisheries Law (Reglamento de la Ley Federal de Pesca) (CEC, 1997).

Articles 79 to 83 of LGEEPA regulate, in general terms, wild flora and fauna. Any development of flora and fauna natural resources, areas or habitats, especially when endangered species are involved, must occur in a manner that does not alter the necessary conditions for the subsistence, development and evolution of such species. Pursuant to the Ecology Law, the following general criteria and measures are to be followed in managing wild flora and fauna:

- Preservation of natural species habitat
- Protection of the evolutionary processes of species and their genetic resources, including areas designated as representative for ecological systems for protection and research
- Protection and development of endemic species, threatened or endangered by extinction, as a means to recuperate the stability of their population
- Strengthening biological reproductive seasons and repopulating forest species
- Promoting community awareness and participation in activities related to species conservation.

Threatened and endangered species are regulated under the general terms of the Ecology Law. NOM-059-ECOL-94 establishes lists of plants and fungi, mammals, birds, reptiles, amphibians, fish and invertebrates classified as either endangered, threatened with extinction, rare, or under special protection. Commercial development of the listed species habitats must occur in a manner that ensures their conservation (CEC, 1997).

5.2.5 Land Use

The Summary Report for the (Urban Development Program Urban Planning and Ecology Department of the Tijuana Municipality, 1994) has instituted the following land-use designations that govern land uses within the vicinity of the SBIWTP, the Hofer Site, and Spooner's Mesa.

5.2.5.1 Existing Urban Structure

The SBIWTP is located to the north of a major residential zone and an equipping zone. The Tijuana Municipality is divided into 16 main zones, and each zone includes the following six categories: (1) residential, (2) commercial/services, (3) equipping, (4) industrial, (5) country estates, and (6) open spaces. The residential area to the south of the SBIWTP is included in Sector 3, which has a total land area of 5.8 acres (2.4 ha). To the southwest of the SBIWTP, along the border, Sector 1 includes the Playas de Tijuana residential area, and the area of the sector is approximately 1,304 acres (528 ha). To the southeast of the SBIWTP, approximately 60 percent of Sector 5 comprises a commercial/services area. The total sector area is 2,376 acres (962 ha).

5.2.5.2 Summary of Physical Conditions

Areas are classified according to the potential opportunities for development. The classification provides four different categories, including suitable, unsuitable, conditional, and special use. The areas to the south of the SBIWTP mostly fall in the suitable category except for some areas that include canyons and ravines that slope toward the border.

5.2.5.3 Partial Planning Strategy

The partial planning strategy for the Tijuana Municipality divides Tijuana into 34 zones and sets categories for urban development. These categories are growth, improvement, and conservation. The zones to the south of the SBIWTP have the following urban development categories:

Zone	Category
1	Growth and Improvement
2	Improvement
7	Improvement
11	Improvement

5.2.5.4 Proposed Land Use and Primary Zoning

The areas to the south of the SBIWTP are high-density residential areas targeted for growth and urban improvement.

Assuming that the sludge disposal facility could be located on federal lands, the right to use federal public property through a permit would be requested. To receive an assignment, permit or authorization for the use of federal public lands, an interested party must demonstrate the need for the activity or use, as well as the social and economic benefits that it will produce. Government agencies, within their areas of competency, may place a lien on the property or the authorization and require interested parties to pay a deposit equal to the amount of the lien in order to protect the public interest. A concession may be granted for up to 50 years and may be revoked if it fails to meet the ends or the conditions originally established or if the use or exploitation harms the land's ecosystems (CEC, 1997).

5.2.6 Traffic and Transportation

The institution with authority over all transportation matters is the Secretariat of Communications and Transport (Secretaría de Comunicaciones y Transportes, or SCT). The SCT is responsible for granting concessions, contracts and permits to private and public individuals intending to carry out transportation activities (e.g., the transport of hazardous waste). Pursuant to LGEEPA, all public and private activities must comply with all environmental laws and regulations. An environmental impact assessment (EIA), for example, must be completed in order to build any public road. All federal public transportation vehicles must also comply with emission verification and certification programs (CEC, 1997).

Regulations regarding the transport of hazardous materials and hazardous waste for import and export between Mexico and other nations specify approval and documentation requirements (Stuckey and Monasterio, 1997).

The import of hazardous materials and the export of hazardous waste must be authorized by SEMARNAP prior to transfer across the border. In addition, general customs regulations of the U.S. and Aduana (Mexican Customs) apply (Stuckey and Monasterio, 1997). If waste is imported or exported, a facility must submit to SEMARNAP a Guía Ecológica (Ecological Guidance Document, or Guía) (see Section 5.4.6, Transportation BMPs). The initial Guía must be filed 45 days before the first import/export, while subsequent Guías for subsequent shipments of the same waste must be filed 5 days prior to import/export.

5.2.6.1 Permits/Approvals

Guías must be requested by persons residing in Mexico and subject to its laws. The Guía provides information about the type of waste, the transporter, and the waste's origin and destination. An approved Guía is valid for 90 days, after which a new Guía must be approved. Authorization for each volume of waste will be granted for a maximum period of 5 working days.

Exports of waste to the United States require completion of the Uniform Hazardous Waste Manifest and prior approval of the receiving state (note that Texas has additional waste importation requirements). Imports of hazardous materials from the United States must be accompanied by the appropriate material safety data sheet(s).

5.2.6.2 NOMs

The following NOMs apply for the transport of hazardous material and waste:

- Regulation for land transportation of hazardous materials and waste
- Listing of most commonly transported hazardous substances, materials and waste (NOM-002-SCT2-1994)
- Land transport of hazardous materials and waste (including container and labeling requirements) (NOM-003-SCT2-1994)
- Emergency information for land transportation of hazardous substances, materials, and waste (NOM-005-SCT2-1994)
- Basic aspects for daily visual inspections of the carrier unit for land transport of hazardous materials and waste (NOM-006-SCT2-1994)
- Containers and packaging for transport of hazardous substances and waste (NOM-007-SCT2-1994)
- Requirements for the inspection of the railroad tracking equipment for transport of hazardous materials and waste (NOM-008-SCT2-1994)
- Compatibility and segregation provisions for storage and transport of hazardous substances, materials, and waste (NOM-010-SCT2-1994)

- Requirements for transport of limited quantities of hazardous substances, materials, and waste (NOM-011-SCT2-1994)
- Requirements for loading, handling, and unloading of hazardous materials and waste in railroad units (NOM-018-SCT2-1994)
- General provisions for cleanup and control of residues of hazardous substances and waste in carrier units for transport (NOM-019-SCT2-1994)
- General requirements for design and construction of railroad tank-vehicles intended for transport of hazardous material and waste, specification SCT 306, SCT 307, and SCT 312 (NOM-020-SCT2-1994)
- Technical specification for the placards that must be displayed by railroad tank-vehicles, metal intermediate bulk containers, and vessels with a capacity greater than 450 liters that transport hazardous materials and waste (NOM-023-SCT2-1994)
- Specifications for construction and reconstruction, as well as test methods, for containers and packaging of hazardous substances, materials, and waste (NOM-024-SCT2-1994)
- Specifications for construction and reconstruction of intermediate bulk-containers (NOM-029-SCT2-1994)

5.2.6.3 Reporting, Record Keeping, and Best Management Practices

Notification of SEMARNAP is required within 15 calendar days after a transfer of hazardous waste across the border has occurred.

Transportation of hazardous materials over public roads is regulated by the SCT in Mexico. Waste shipments must be accompanied by a Hazardous Waste Manifest (Manifiesto de Entrega Transporte y Recepción de Residuos Peligrosos) and may only be conducted by transporters licensed by the Secretary of Communications and Transportation. Hazardous waste transport requires the proper labeling of containers and placarding of vehicles in Spanish. Hazardous waste containers must be labeled to:

- Identify contents as “Hazardous Waste”
- Provide the generator/importer address and identification number
- Indicate the EPA/SEMARNAP waste stream code (and the appropriate state waste code) and date
- Indicate the manifest number

The waste transporter must be properly registered and bonded. Shipping papers include U.S. and Mexican manifests and the Guía.

5.2.7 Public Health and Safety

5.2.7.1 Hazardous Waste Regulations

The regulations concerning hazardous waste would apply to the sludge disposal facility in Mexico if it disposes wastes determined to be hazardous.

Permits/Registrations

SEMARNAP authorizes the installation and operation of all hazardous waste collection, storage, treatment, and disposal facilities constructed in Mexico. Any facility handling hazardous waste must obtain an operating license (licencia de funcionamiento) or one-stop environmental license prior to commencing operations. In addition, a hazardous waste notification must be submitted to SEMARNAP before hazardous waste management facilities commence operation.

NOMs

Wastes are determined to be hazardous if they are corrosive, reactive, explosive, toxic, ignitable, or biologically infectious (CRETIB). CRETIB and hazardous waste are defined in NOM-052-ECOL-1993. A list of hazardous wastes includes the following listing under “Classification of Wastes by Non-Specific Source”:

Waste sludge from the biological treatment of wastewater containing any substance toxic to the environment in concentrations equal to or higher than the limits set in article 5.4 (CRETIB Code: T; INE Number: RPNE 1.1/0.2)

A mixture of hazardous waste (per NOM-052-ECOL-1993) and nonhazardous waste is considered a hazardous waste.

NOMs for hazardous waste include:

- Criteria for hazardous waste characterization and listing (NOM-052-ECOL-1993)
- Procedure for performing the extraction test for determining the constituents that make a waste hazardous due to their toxicity to the environment (NOM-053-ECOL-1993)
- Requirements for facilities that store hazardous waste, excluding radioactive waste (NOM-055-ECOL-1993)
- Requirements for the design and construction of additional facilities at sites used for containment of hazardous waste (NOM-056-ECOL-1993)
- Requirements for design, construction, and operation of controlled storage cells for hazardous wastes determined in NOM-052-ECOL-1993 (NOM-057-ECOL-1993)
- Requirements for operation of sites used for containment of hazardous wastes (NOM-058-ECOL-1993)
- Regulations for land transport of hazardous materials and waste

NOMs for sludge include NOM-CRP-001-ECOL-1993 that establishes the characteristics of dangerous residuals, presents the listing of the same and the limits that make a residual hazardous due to its toxicity to the environment.

Reporting, Record Keeping, and Best Management Practices

Special requirements for storage, labeling, record keeping, and shipping of hazardous waste apply. Open storage facilities should:

- Not be located in areas below the water level produced by the greatest storm registered in the zone, plus a safety factor of 1.5
- Have smooth floors built of an impermeable material compatible with and resistant to the waste
- Have lightning rods
- Have gas and vapor detectors with an audible alarm where volatile wastes are stored

Hazardous waste facilities must comply with the following reporting requirements to SEMARNAP:

- Semiannual shipment summary reports
- Annual reports of hazardous waste generation prepared on the *Encuesta Industrial* (this form may also serve as notification of anticipated changes in volumes or types of waste generated)
- Nonreceipt of the hazardous waste manifest from the disposal facility within 30 days of shipment
- Spills, leaks, discharges, or losses of hazardous waste

SEMARNAP requires the responsible facility to remediate soils contaminated with hazardous waste as a result of generation, handling, or final disposal of hazardous waste or materials (LGEEPA, Article 152, December 13, 1996). The clean-up goals are based on the activities proposed in the Urban Development or Ecological Arrangement Program applicable to the site or zone.

All facilities are encouraged to develop and implement BMPs for waste identification and tracking of inventory, waste minimization, storage and handling, treatment and disposal, emergency planning, training, reporting, and record keeping.

5.2.7.2 Solid Waste

Rules regarding the management of solid waste would apply to the sludge disposal facility in Mexico because it would store solid waste.

Permits/Registrations

The Mexican States have authority to regulate and manage all waste that is not corrosive, toxic, reactive, explosive, or biologically infectious. Landfills need to obtain the necessary approvals from state and local agencies to operate. Incineration, rather than disposal in a landfill, is encouraged for nonhazardous combustible wastes. Waste that does not strictly

fit the criteria for hazardous waste (i.e., hazardous properties are not clearly exhibited), should be managed as hazardous waste.

NOMs

The following NOMs have been implemented or were being considered at the time the information sources were compiled (October 1995):

- Conditions that must be met at sites used as municipal landfills for solid waste (NOM-083-ECOL-1996)
- Draft requirements for the design and construction of sanitary landfills relating to topography, determination of solid wastes to be deposited, volumetric capacity, life span, storage cells, impermeable linings, drainage, leachate monitoring and extraction, access areas, and auxiliary facilities (Draft NOM-084-ECOL-1993)
- Draft site conditions for solid waste landfills providing binding standards related to topographical, geological, geohydrological, permeability, and aeration capacity of sites designated for solid waste landfills (Draft NOM-083-ECOL-1994)

Reporting, Record Keeping, and Best Management Practices

Facilities should keep documentation indicating the nonhazardous status of wastes that have been tested and listing the quantities accepted.

5.2.8 Visual Resources

The summary report for the urban development program for the Tijuana Municipality (Programa de Desarrollo Urbano del Centro de Población Tijuana—Version Abreviada, Urban Planning and Ecology Department of the Tijuana Municipality, 1994) includes in Section 2.4.4 imagen urbana (urban image) regulations and local criteria to preserve, improve, and in some cases develop a particular urban image by means of restrictions in the construction of urban facilities and greenbelts in public roads, public areas, open areas, and any other zones with potential for development.

This document states the importance of preservation of tree zones and the locations of public areas such as parks and recreation and sports facilities.

The forestation of streets and roads is very important to provide shading and to promote planting of trees to restrict access to the public in those zones requiring such restriction. Industrial zones must be protected with rows of trees to block the wind into the adjacent residential areas. Regulations control maximum allowed building heights and the setting of a building within a lot.

5.2.9 Air Quality Regulations

Air quality regulations could apply to the facility because emissions generated in the United States have the potential to affect air quality in Mexico. A sludge facility could also affect air quality, although a site has not been selected for sludge disposal. The following requirements apply to fixed (stationary) sources of air emissions located in Mexico.

To ensure that air quality standards are met, the One-Step Environmental License or Operating License acts as an air permit and may include the following:

- Requirement to submit air emissions inventories
- Specification of the frequency of submittal of the inventories
- Specification of the frequency of air pollution monitoring (e.g., annually for stacks of combustion sources such as boilers and dryers)
- List of steps to be taken in emergencies
- Specifications of air pollution control equipment and operating conditions

All air emissions must conform with air NOMs. The permit may also specify maximum emission levels with SEMARNAP if an area becomes a critical zone, more efficient control technologies become available, or upon modification of the source. Complaints from the public regarding nuisances (e.g., odors) will be investigated by the facility, which will correct any deficiencies. Regional and local requirements could be applicable in addition to federal requirements.

5.2.9.1 Standards

Health-based ambient air quality standards have been set by Mexico for various regions of the country. Table 5.2-8 lists the air quality standards applicable to the border area.

Table 5.2-8
AMBIENT AIR QUALITY STANDARDS FOR MEXICO

Pollutant	Units	Average
O ₃	0.11 ppm	1 hour
SO ₂	0.13 ppm 0.03 ppm	24 hours annual
NO ₂	0.21 ppm	1 hour
CO	11 ppm	8 hours
TSP	260 µg/m ³ 75 µg/m ³	24 hours annual
PM ₁₀	150 µg/m ³ 50 µg/m ³	24 hours annual
Lead	1.5 µg/m ³	3 months

Source: San Diego State University

5.2.9.2 NOMs

NOMs include:

- Measurement methods for carbon monoxide, total suspended particulates in air, ozone, nitrogen dioxide, sulfur dioxide, including the calibration procedures for measurement equipment (NOM-034-ECOL-1993 through NOM-038)
- Maximum permissible levels of atmospheric emissions of solid particles from fixed sources (NOM-043-ECOL-1993)

- Criteria for evaluation of the environmental air quality for total suspended particles (TSP). Permissible value for TSP in air as a protective measure for general populations (NOM-024-SSA1-1993)

5.2.9.3 Reporting, Record Keeping, and Best Management Practices

Reporting requirements include agency notification in case of failure of control equipment, unexpected startups and shutdowns that could cause pollution, and unauthorized releases. Aside from the air emission inventory, the Environmental Performance Report must be submitted during the first four months of every year.

All equipment specifications, reports, emissions inventories, maintenance records, and air modeling results should be kept at the facility. BMPs should be instituted to properly characterize and control air emissions resulting from normal operations.

5.2.10 Noise

Noise regulations would apply to any future sludge disposal facility in Mexico if it operates stationary or mobile equipment.

5.2.10.1 Permits/Registrations

If a facility can demonstrate that it is technically or economically not feasible for that facility to comply with applicable noise standards (see Table 5.2-9) it can request the determination of facility-specific noise standards. The application must include information on the location of the facility, the type of facility, origin and characterization of noise, reasons why the noise level cannot be reduced, and a time schedule for the operation of the noise source. Furthermore, the application must include a proposed program for maximum noise reduction and an implementation schedule for the program.

Exemptions do not exist for vehicles. Noncompliant vehicles should be either repaired or taken out of operation.

5.2.10.2 Standards

Noise monitoring is not required but facilities must comply with noise standards. The maximum permissible noise level from a stationary source, as measured at the property boundary, is 68 dB(A) from 6 AM to 10 PM and 65 dB(A) for the remaining hours. The degree of annoyance shall not exceed 5 degrees on a modified Likert 7 degree scale. Warning devices are exempted from this standard. Table 5.2-9 lists compliance standards for trucks and heavy equipment.

Table 5.2-9
EQUIPMENT NOISE STANDARDS

Gross Vehicle Weight	Up to 3,000 kg	Up to 10,000 kg	Over 10,000 kg
Maximum Permissible Level (dBA)	79	81	84

The measurements shall be taken 15 meters (50 feet) from the source by the Dynamic Method according to the respective standard.

Source: Stuckey and Monasterio, 1997.

Measurements demonstrating compliance must be taken continuously or semicontinuously during a 15-minute interval.

5.2.10.3 NOMs

NOM-081-ECOL-1994 establishes the maximum permissible limits for noise emissions from a fixed source and monitoring procedures. In this norm, Section 5.4 sets the maximum permissible limits for weighted noise levels and are presented in Table 5.2-10.

Table 5.2-10
MAXIMUM PERMISSIBLE LIMITS FOR WEIGHTED NOISE LEVELS

Hour of the Day	Maximum Permissible Limits
From 06:00 to 22:00	68 dB*
From 22:00 to 06:00	65 dB*

*dB = decibel

The environmental protection and ecological protection law and regulations for the State of Baja California, Mexico also provides definitions and limitations for noise under Chapter II, Control and Prevention of Pollution by Noise, Vibrations, Thermal Energy, Light, and Unpleasant Odors. Section I, Definitions Under Article 153, provides definitions.

5.2.10.4 Reporting, Record Keeping, and Best Management Practices

Noise measurements should be taken and records should be kept to demonstrate compliance. Vehicles should be appropriately maintained to minimize noise impacts. A system should be implemented to respond to and investigate noise complaints.

5.2.11 Energy Consumption

According to the national Energy Conservation Program (Programa de Conservación de Energía) issued by the Energy Secretariat (Secretaría de Energía), the consumption of electric energy should be reduced in order to provide it at a very low cost to the consumer (CEC, 1997). The public and private use of productive resources should be conducted in the public interest and in accordance with principles of social equity in order to conserve such resources and protect the environment.

5.2.12 Social Participation and Distribution of Environmental Information

5.2.12.1 Public Access

While Mexico does not have a general law requiring public access to information, LGEEPA provides for general public access to MIAs. The Federal Attorney General for Environmental Protection (Procuraduría Federal de Protección al Ambiente, or PROFEPA), a decentralized entity within SEMARNAP, is responsible for general promotion and dissemination of environmental information. Although not specifically provided for in the law, the National Institute of Ecology (Instituto Nacional de Ecología, or INE) is also a major source of environmental information through the publication of special documents and reports, including the biannual "Report of the General Situation in Ecological Balance

and Environmental Information" (Informe de la Situación General Sobre el Equilibrio Ecológico y Información Ambiental).

The Ecological Gazette is issued every 3 months by INE, which is also a decentralized entity within SEMARNAP. The law directs INE to include in the Ecological Gazette all new NOMs, agreements, orders, resolutions, circulars, notices, and general communications corresponding to SEMARNAP. INE is also responsible for publishing notices informing the public of EIAs that are available for citizen review.

5.2.12.2 Social Participation

The federal government is required to promote social participation in the formulation of environmental policy, in the application of environmental laws, and in information and enforcement actions including MIAs.

Chapter 6

Long-term Productivity and Significant Environmental Changes

Under NEPA, an EIS must address "...the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity..." with regard to potential impacts of the Action proposed (40 CFR § 1502.16). Each of the project alternatives considered involves tradeoffs between potential beneficial effects and direct and indirect adverse impacts occurring over time.

As noted in Section 1.1, the primary purpose of the project is to identify long-term treatment options for wastewater originating in Tijuana, Mexico. By their very nature, sewage treatment facilities enhance society's long-term productivity by providing the sanitation system infrastructure necessary to support additional urban growth and development, as well as to safeguard long-term public health and safety.

6.1 Local Short-term Uses

The primary short-term effects of implementation of the identified alternatives are those associated with construction. The construction process could adversely affect local noise levels, traffic access along Dairy Mart Road and Monument Road, and air quality due to airborne dust particles. These construction impacts, however, would be temporary in nature.

6.2 Maintenance and Enhancement of Long-term Productivity

The project alternatives would commit varying amounts of land (acreage) for the proposed sewage treatment facilities over the foreseeable future. Development of wastewater treatment ponds would not irrevocably commit the land to the extent that it would exclude the extraction of mineral resources, but would preclude mining of the deposits for the foreseeable future. After their useful life, the treatment plant facilities and land could be reclaimed for another use. However, the land could not likely be returned to its natural state.

Construction and operation of sewage treatment facilities entail a sizable commitment of capital and a long-term commitment of property. Long-term effects of project implementation would include the consumption of nonrenewable resources for construction purposes; however, such consumption would not be in excess of similar-scale construction projects. Increased amounts of chemicals and energy would need to be allocated for operational use in the wastewater treatment process; however, use of

such compounds would not exceed those used at similar-scale facilities elsewhere in the region.

In terms of long-term productivity, no potential for adverse impacts has been identified for any of the alternatives addressed that would cause the project alternatives to result in detrimental effects to long-term productivity.

6.3 Significant Irreversible Environmental Changes

For land development projects of this magnitude, the most significant irreversible commitment is usually the land on which a project is located. The SBIWTP project alternatives would commit varying amounts of land for the proposed sewage treatment facilities over the foreseeable future. With the exception of property associated with the Advanced Integrated Pond System (AIPS) at Spooner's Mesa alternative, the property in question already has been subjected to substantial disturbance through previous activities, including the construction of the SBIWTP. Consequently, irreversible change in the land has already occurred, and the proposed project involves a beneficial use of portions of this land.

The materials and energy necessary to implement the project alternatives will be irreversibly committed. The construction of the proposed facilities would involve the consumption of energy derived from nonrenewable sources such as fossil and nuclear fuels. Building materials would also be permanently consumed, although there is the potential for recycling at least a portion of these materials. Operation of the pumping stations and treatment plant would require a future long-term commitment of energy. The material and energy resources committed for the project alternatives, however, would not exceed those associated with similar-scale construction projects. These commitments, therefore, are not considered to be significant.

Chapter 7

Preparers and Their Qualifications

7.1 Federal

7.1.1 International Boundary and Water Commission, U.S. Section

Co-Lead Agency (with EPA) responsible for SEIS; SBIWTP project management and coordination. Key personnel include:

Charles Fischer, Environmental Protection Specialist
Bill Ruth, Principal Engineer
Dion McMicheaux, Project Manager
Raymundo Aguirre, Environmental Engineer

Responsibilities: Technical review of SEIS; public and agency coordination.

7.1.2 Environmental Protection Agency, Region IX

Co-Lead Agency (with USIBWC) responsible for SEIS; management and coordination for EPA. Key personnel include:

Elizabeth Borowiec, AICP, Project Manager
Terrence Fleming, Life Scientist
Sheldon Gen, Environmental Engineer
Bob Moyer, Legal Counsel
Nancy Woo, Environmental Scientist

Responsibilities: Technical review of SEIS; public and agency coordination.

7.1.3 International Boundary and Water Commission, Mexico Section

The United States Section has coordinated the technical preparation of the SEIS with the following representatives of the IBWC, Mexican Section.

Roberto Espinoza, Resident Engineer, Tijuana
Luis Antonio Rascón Mendoza, Principal Engineer
J. Arturo Herrera Solís, Commissioner

7.1.4 U.S. Army Corps of Engineers

Provides assistance to USIBWC and EPA in their lead agency responsibilities. Key personnel include:

Hayley Lovan, Project Manager
Jennifer Altergott, Ecologist

Responsibilities: Technical review of SEIS; public and agency coordination.

7.2 State

7.2.1 California Regional Water Quality Control Board—San Diego

State cooperating and permitting agency.

Vicente Rodriguez, Sanitary Engineering Associate

Kristin Schwall, Associate Water Resource Control Engineer

Responsibilities: Technical review of SEIS.

7.2.2 State Water Resources Control Board

State cooperating and funding agency.

Bart Christensen, California/Mexico Border Coordinator, Senior Engineer

Responsibilities: Technical review of SEIS.

7.3 Local

7.3.1 San Diego Metropolitan Wastewater Department

Provided assistance to USIBWC and EPA in their lead agency responsibilities. Key personnel include:

Ann Sasaki, Project Manager

Responsibilities: Technical review of SEIS.

7.4 Consulting Staff

Responsible for preparation of the SEIS. Key personnel include:

7.4.1 CH2M HILL

Alberto Acevedo, Senior Civil and Chemical Engineer

Qualifications: M.S., Environmental Engineering; B.S., Chemical Engineering

Responsibilities: Sludge Quantity and Quality Evaluation

Dan Badaluco, Civil Engineer

Qualifications: B.S., Civil Engineering

Responsibilities: Flow Equalization Basin Evaluation

Barbara Bradley, Environmental Engineer

Qualifications: M.S., Environmental Engineering; B.S., Civil Engineering

Responsibilities: Marine Water Quality, Marine Biological Resources, Sludge Quantity and Quality, Evaluation of Effluent Coliform Levels and Disinfection for Ocean Discharge, Modification to the Hofer Site Alternative

Earl Byron, Environmental Scientist

Qualifications: Ph.D., Ecology; B.A., Biology

Responsibilities: Ecological Risk Assessment

Marjorie Castleberry, Environmental Scientist

Qualifications: B.S., Wildlife and Fisheries Biology

Responsibilities: Biological Resources

Jennifer Cohen, Environmental Scientist

Qualifications: M.S., Water Resource Management; B.S., Water Resources

Responsibilities: Noise and Scenic, Visual, and Recreation

Karen Di Carlo, Environmental Planner

Qualifications: M.S., Candidate, Environmental Studies; B.A., Social Ecology

Responsibilities: Project Coordination

Melody Embree, Environmental Planner

Qualifications: M.S., Candidate, Environmental Management; B.A., Liberal Arts

Responsibilities: Public Records

Rick Fornelli, San Diego Area Manager/Water Reclamation Engineer

Qualifications: M.S., Sanitary Engineering; B.S., Civil Engineering

Responsibilities: Program Manager

Ed Latimer, Agricultural Irrigation Engineer

Qualifications: Ph.D., Agricultural Engineering; M.S., Agricultural Engineering; B.S., Agricultural Engineering

Responsibilities: Assistant Program Manager

Linda Morse, Senior Planner

Qualifications: B.A., Mathematics; MLA (Environmental Planning)

Responsibilities: Air Quality and Odors

Jim Newton, Senior Wastewater Engineer

Qualifications: M.S., Sanitary Engineering; B.S., Civil Engineering

Responsibilities: Present Value Analysis, Sludge Quantity and Quality

Karin Noack, Environmental Planner

Qualifications: M.S., Biology (in progress); B.S., Environmental Science

Responsibilities: Standards of Significance

Tom Peters, Senior Planner

Qualifications: B.A., Environmental Studies and Sociology

Responsibilities: Senior Consultant

Bob Price, Environmental Scientist

Qualifications: B.S., Zoology

Responsibilities: Socioeconomics, Public Health and Safety

Christine Roberts, Senior Environmental Planner

Qualifications: M.C.P., Architecture and City Planning; B.A., Political Science

Responsibilities: Project Manager

Gary Santolo, Environmental Scientist

Qualifications: M.S., Avian Sciences; B.S., Avian Sciences

Responsibilities: Biological Assessment Addendum

Kyle Winslow, Hydraulic Engineer

Qualifications: M.S., Civil/Environmental Engineering; B.S., Civil Engineering

Responsibilities: Ocean Modeling

7.4.2 GDC

Steve Costa, Principal

Qualifications: Ph.D., Oceanography; M.S., Engineering Science; B.S., Engineering

Responsibilities: Ocean Modeling: Assessment of Compliance with California Ocean Plan

Karen Glatzel, Principal

Qualifications: Ph.D., Environmental Planning; M.S., Oceanography/Coastal Zone Management; B.S., Fisheries

Responsibilities: Ocean Modeling: Assessment of Compliance with California Ocean Plan

7.4.3 Regional Environmental Consultants (RECON)

Scott Fulmer, Senior Project Manager

Qualifications: B.A., Anthropology. Certified by the Society of Professional Archeologists

Responsibilities: Traffic, Air Quality, Land Use, Cultural Resources

7.4.4 Swanson Oswald Associates

Lorne Swanson, Principal

Qualifications: M.S., Civil Engineering; B.S., Civil Engineering

Responsibilities: Modification to the Hofer Site Alternative

Chapter 8

References Cited

References cited in the text are listed below by section.

Section 1 Purpose and Need

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No additional references cited.

Chapter 9

Glossary of Terms, Acronyms, and Index

9. Chapter 9

Glossary of Terms, Acronyms, and Index

9.1 Terms

A

Activated Sludge	A biological suspended-culture treatment system containing active micro-organisms and a sludge return system that treats wastewater to a secondary treatment level.
Advanced Integrated Pond System	A series of specialized ponds that perform biological processes with minimal power requirement to treat wastewater to a secondary-equivalent treatment level.
Advanced Primary Treatment	Sedimentation aided by chemical coagulation and flocculation (process of accumulating suspended matter in wastewater).
Alluvial	A geologic term pertaining to generally silty or silty clay deposits laid down during floods by streams, river beds, or floodplains.
Aquifer	A geological formation that is sufficiently permeable to conduct groundwater and to yield significant quantities of water to wells and springs.

B

Benthic	Plants and animals living on or closely associated with the bottom of the ocean.
Bight	A curve in a coastline and the bay formed by that curve.
Biodegradable	Capable or being readily decomposed by microbial action.

C

Categorical Exclusion	A category of project actions, which a federal agency identifies in its NEPA procedures, that do not individually or cumulatively have a significant effect on the environment.
Completely Mixed Aerated Pond System	A highly mechanically aerated pond treatment system used to achieve secondary treatment of wastewater.
Conventional Primary Treatment	Process that removes solid materials from wastewater without chemical addition.
CNEL	Community Noise Equivalent Level. A noise level measure whose values are time-weighted, 24-hour, average noise levels.

D

Digester Pit	A deep submerged portion of a wastewater treatment plant used to anaerobically decompose (digest) wastewater solids.
Dry Weather Flow	Wastewater flow that occurs without increases caused by rainfall; usually refers to flows from May through November.

E

Environmental Assessment	A concise public document that analyzes the environmental impacts of a proposed federal action and provides sufficient evidence to determine the level of significance of the impacts.
Environmental Impact Report	A document in which the impacts of any state or local, public or private project action which may have a significant environmental effect are evaluated prior to its construction or implementation as required by the California Environmental Quality Act.
Environmental Impact Statement	A document prepared to evaluate the environmental effects of a project that requires federal review under the National Environmental Policy Act.
Environmentally	The project alternative considered to be the one preferable alternative that best promotes the environmental policy expressed in NEPA.

F

Family	A householder and one or more other persons living in the same household who are related by birth, marriage, or adoption.
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Family income	Similar to household income, except that everyone contributing to the income is related.
Flow equalization basin	Structure to accommodate peak advanced primary effluent flow storage and subsequent off-peak discharge to secondary treatment facilities.
H	
Headworks	The structures at a treatment plant where the wastewater enters the plant.
Household	All persons who occupy a housing unit (house, apartment, mobile home, etc.). Occupants may be a single family, one person living alone, two or more families living together, etc.
Household income	The income of the householder and all other persons 15 years old and over in the household, whether related or not.
I	
Impacts	Environmental effects or consequences attributable, either directly or indirectly, to implementation of a project.
L	
Lead agency	The agency or agencies that have taken the primary responsibility for preparing the EIS.
Liner	A liner to cover soil, used to produce an impermeable barrier.
L_{eq}	The equivalent sound pressure level, which is the average noise level, on an energy basis, for a stated period of time (usually one hour).
M	
Minute	Agreement between the U.S. and Mexican sections of the IBWC.
Mitigation measures	Actions/steps to be undertaken or implemented as a condition for approval of a proposed project to avoid, minimize, and/or eliminate the adverse environmental consequences.
N	
National Environmental Policy Act	Federal legislation that establishes environmental policy for the federal government.. It provides an interdisciplinary framework for federal agencies to

prevent environmental damage and contains “action-forcing” procedures to ensure that federal agency decision-makers take environmental factors into account.

Notice of Intent

The first formal step in the EIS process, consisting of a notice with the following information: a description of the proposed action and alternatives; a description of the agency’s proposed scoping process, including scoping meetings; and the name and address of the persons to contact within the lead agency regarding the EIS.

O

Organic Loading

The amount of organic (carbonaceous) matter present in wastewater

P

Preferred Alternative

The project alternative that the lead agencies believe would fulfill their statutory mission and responsibilities in consideration of economic, environmental, technical, and other factors.

Pretreatment Program

A program to institute treatment of wastewater by the generator, usually an industrial facility, before discharge to the sewer system.

R

Record of Decision

A public document that reflects the agency’s final decision, rationale behind that decision, and commitments to monitoring and mitigation.

S

Secondary Treatment

The second step in a wastewater treatment systems in which bacteria consume the organic parts of the wastes and reduce the concentrations of total suspended solids and biochemical oxygen demand to 30 mg/L each, normally achieved by an activated sludge treatment plant.

Secondary Equivalent	A biological treatment process other than activated sludge that reduces the concentrations of total suspended solids and biochemical oxygen demand to a level that is near but above 30 mg/L, and which is accepted as an equivalent level of secondary treatment; normally applied to pond and trickling filter wastewater treatment systems.
Sensitive Receptor	One who could be adversely affected by a particular change in the environment.
Significant	Of importance, of consequence.
Sludge	Precipitated solid matter produced by sewage treatment processes.
Soluble Threshold Limit Concentration	California Title 22 concentration limit applied to the leachate from a material to determine whether the material is hazardous by virtue of the concentration of a specific metal or organic compound in µg/L for which a limit has been set, as determined by the Waste Extraction Test.
T	
Tertiary treatment	Wastewater treatment of secondary treated effluent that includes chemical clarification, recarbonation, multimedia filtration, carbon adsorption, chlorination, and reverse osmosis. The effluent quality resulting from this process meets drinking water standards.
Total Threshold Limit Concentration	California Title 22 concentration limit applied to a material to determine whether the material is hazardous by virtue of the concentration of a specific metal or organic compound in mg/kg for which a limit has been set.
Toxicity Characteristic Leaching Procedure	U. S. federal and Mexican federal concentration limit applied to the leachate from a material to determine whether the material is hazardous by virtue of the concentration of a specific metal or organic compound in µg/L for which a limit has been set, as determined by the test method specified in CFR 261.30 Appendix II.
Trapping depth	The depth to which the discharged effluent rises vertically before spreading and migrating horizontally.
Trickling filters	Wastewater treatment typically using filter media to provide a surface for biological growth.

W

Watershed A region bounded by a narrow tract of high ground which divides the flow of surface waters. A region that contributes water to a particular stream channel or system of channels.

Wet Weather Flow Wastewater flow that contains rain (storm) water, usually referring to flows from November through April.

Z

Zone of Initial Dilution The zone surrounding the outfall discharge point where effluent is initially diluted to a minimum of 100:1.

9.2 Acronyms

AB	Assembly Bill
ADT	average daily traffic
AICUZ	Air Installation Compatible Use Zones
AIPS	Advanced Integrated Pond System
APCD	Air Pollution Control District
APE	Area of potential effect
AQAP	Air Quality Attainment Plan
ASBS	Area of Special Biological Significance
ASTM	American Society of Testing Materials
BECC	Border Environment Cooperation Commission
BMPs	best management practices
BOD	biochemical oxygen demand
BOD ₅	5-day biochemical oxygen demand
CAAQS	California ambient air quality standards
Cal/BECC	California Border Environmental Cooperation Committee
Cal/EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CBOD	carbonaceous biochemical oxygen demand
CCD	Coastal Consistency Determination
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEC	Commission for Environmental Cooperation
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CESPT	State Public Service Commission of Tijuana
CFR	Code of Federal Regulations
CMA	Completely Mixed Aerated

CNA	Comisión Nacional de Aguas
CNEL	Community Noise Equivalent Level
CPD	<u>particular conditions of discharge (Mexican)</u>
CPFV	commercial passenger fishing vessel
CRETIB	corrosive, reactive, explosive, toxic, ignitable, or biologically infectious
CRWQCB	California Regional Water Quality Control Board
CWA	California Water Authority
D/T	dilutions over threshold
D/T	Dilutions over threshold
DAF	dissolved air flotation
dB	decibel
dBA	decibel A-weighted scale
DDT	Dichlorodiphenyl-trichloroethane
DGE	Dirección General de Ecología
DHS	(California) Department of Health Services
DMRBI	Dairy Mart Road Bridge Improvements
DO	Dissolved oxygen
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EDL	elevated data levels
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERA	Environmental Risk Assessment
ESA	Endangered Species Act
ESA	Environmental Site Assessment
FEB	Flow Equalization Basin
FONSI	Finding of No Significant Impact
FWS	Fish and Wildlife Service
gpm	gallons per minute
HAS	Hazardous Substance Account

HCH	hexachlorocyclohexane
HEC-RAS	Hydraulic Engineering Center–River Analysis System
HSAA	Hazardous Substance Account Act
HUD	Housing and Urban Development
I-5	Interstate 5
IBWC	International Boundary and Water Commission, U.S. and Mexican Sections
<u>INE</u>	<u>Instituto Nacional de Ecologia</u>
INS	U.S. Immigration and Naturalization Service
IWTP	(South Bay) International Wastewater Treatment Plant
kWh	kilowatt hours
<u>LGEEPA</u>	<u>Ley General del Equilibrio Ecologico y la Proteccion al Ambiente</u>
LOS	level of service
m	meters
MAHL	maximum allowable headworks loading
MG	million gallons
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mg/m ³	milligrams per cubic meter
mgd	million gallons per day
MHHW	mean higher high water
MIA	Manifestacion de Impacto Ambiental
mL	milliliter
MLLW	mean lower low water
MM	modified mercalli
MMPA	Marine Mammal Protection Act
MOU	Memorandum of Understanding
MPN	most probable number
msl	mean sea level
MSPC	Multi-Species Conservation Plan
MTBA	Migratory Bird Treaty Act
MW	megawatts
NAAQS	National Ambient Air Quality Standards

NADBank	North American Development Bank
NAFTA	North American Free Trade Agreement
NEPA	National Environmental Policy Act
ng/L	nanograms per liter
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOLF-IB	Navy Outlying Field, Imperial Beach
NOM	Norma Oficial Mexicana
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWR	(Tijuana Slough) National Wildlife Reserve
O&M	operations and maintenance
OCA	offsite consequence analysis
OHW	Ordinary High Water
OSHA	Occupational Safety and Health Act
PA	Programmatic Agreement
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PERL	Pacific Estuarine Research Laboratory
pH	measurement of the level of acidity or alkalinity of a substance
PM ₁₀	particulate matter less than 10 microns
ppb	parts per billion
pphm	parts per hundred million
ppm	parts per million
ppt	parts per thousand
<u>PROFEPA</u>	<u>Procuraduria Federal de Protection al Ambiente</u>
RAQS	Regional Air Quality Standards
RCRA	Resource Conservation and Recovery Act
RECON	Regional Environmental Consultants
RMP	Risk Management Program

RMPP	Risk Management Prevention Plan
ROD	Record of Decision
ROV	remotely operated vehicle
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SBIWTP	South Bay International Wastewater Treatment Plant
SBLO	South Bay Land Outfall
SBOO	South Bay Ocean Outfall
SBSTP	South Bay Secondary Treatment Plant
SBWRP	South Bay Water Reclamation Plant
SCAQMD	South Coast Air Quality Management District
SCCWRP	Southern California Coastal Waters Research Project
SCT	Secretaria de Comunicaciones y Transportes
SDAB	San Diego Air Basin
SDG&E	San Diego Gas & Electric
SDM	Shore Discharge Model
SEDUE	Secretariat of Urban Development and Ecology
SEIS	Supplemental Environmental Impact Statement
SEMARNAP	Secretaria de Medio Ambiente, Recursos Naturales y Pesca
SHPO	State Historic Preservation Officer
SMW	State Mussel Watch
STLC	soluble threshold limit concentration
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resource Control Board
TCLP	toxicity <u>characteristic</u> concentration leaching potential
TCM	transportation control measures
TDS	total dissolved solids
TJVCWD	Tijuana Valley County Water District
TOC	Technical Oversight Committee
TOES	Tijuana Oceanographic Engineering Study
TQ	threshold quantities

TRNERR	Tijuana River National Estuarine Research Reserve
TRPH	total recoverable petroleum hydrocarbon
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, and Disposal Facility
TSS	total suspended solids
TTLIC	total threshold limit concentration
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USIBWC	International Boundary and Water Commission, United States Section
ZID	zone of initial dilution
μ	microgram
μg/L	micrograms per liter
μg/m ³	micrograms per cubic meter

9.3 Index

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